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ESSAYS
ON THE
DISEASES OF THE EYE.

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(Continued from p. 765.)

PURULENT CONJUNCTIVITIS.

Diagnosis.—The secretion of pus, not mucus, distinguishes it from catarrhal conjunctivitis, hence the only other affections with which it may be confounded is the gonorrhœal form. It may be known from this latter by its almost invariably attacking both eyes, whilst the gonorrhœal disease is confined to one, at all events for some time. The history of the disease, where the patient does not wish to deceive, is also sufficient, as gonorrhœa almost invariably still exists in the latter cases. The discharge also is thicker, and all the symptoms are more violent; its commencement is quicker, and the lids are free from granular changes, &c.; it occurs also in single cases, whilst the purulent conjunctivitis affects several persons living together.

Prognosis.—Dr. Vetch states that the total strength of the second battalion of the 52nd was somewhere about 700 men. 636 cases, including relapses, were admitted into the hospital from August, 1805, till the same month in 1806; of these 50 were dismissed with the loss of both eyes, and 40 with that of one. Müller (Erfahrungssätze, p. 159,) treated 1604 cases, including 200 relapses, in the Prussian garrison of Mentz in three years and a half, and of these only 1344 were restored to perfect vision. It is also asserted that out of 30,000 cases occurring in the Prussian army from 1813 to 1821, blindness followed in 1100.

Where the disease is seen sufficiently early, and is properly treated, the prognosis is not unfavourable. If proper treatment be *not* adopted, the disease produces fearful havoc; thus, in the French slave-ship *Rôdeur*, crowded with 160 negroes, the disease came on from ordinary causes; and being treated improperly, at the termination of the voyage 39 patients were left totally blind, 12 had lost one eye each, and 14 had opacities of the cornea. Of the sailors, 12 lost their sight wholly, 5 lost one eye each, and 4 had considerable opacities and adhesion of the iris to the cornea. (Bibliothèque Ophthalmologique, par M. Guillié, p. 74.) As far as I have observed myself the disease is most unfavourable in disordered states of the general health. In the Egyptian malady, those suffered most whose health had been much deranged by irregularity and intemperance, and who had been the longest exposed to the predisposing causes.

Causes.—The most powerful *predisposing* causes are those originating in the crowding of individuals, as want of pure air, noxious effluvia, close personal intercourse, &c., which are aggravated if aided by want of cleanliness, insufficient clothing, scanty or unwholesome diet, the use of the same washing utensils, towels, &c. Next must be enumerated unfavourable conditions of the atmosphere, and the more common causes of inflammation which render the affection so common in Egypt; for there the excessive heat of day is followed by night chills and heavy dews; and the land is periodically covered by water, which is only evaporated by the sun's heat. With these are combined the powerful light and glare from the sandy surface, and the quantity of fine sand which is raised into the air with every breath of wind. We can readily explain how the disease gradually ceases when bodies of affected individuals become separated and dispersed into healthy situations, by the weakening or withdrawal of the predisposing causes.

The *exciting* causes may be common or mechanical sources of irritation, sudden draughts of cold air to the eye while the body is heated, &c. When the persons affected are of a low station in life, the affection, thus commenced, almost invariably attacks most or all the members of their immediate family, who dwell under the same roof. Such families are crowded together, many often sleeping in one bed, are rarely sufficiently attentive to cleanliness, and use the same towels, sponges, and soap, for washing. This latter consideration leads

me to speak of the *infectious* nature of the disease.

Infection and Contagion.—No doubt can exist that *direct application* of matter from an affected to a healthy eye will produce the disease, but may not perhaps invariably; just as two individuals may be equally exposed to the same danger of contracting gonorrhœa, one takes the disease, whilst the other escapes unharmed. Mr. Macgregor (Transactions of a Society, &c., vol. 3, pp. 51-4,) mentions three instances where the disease was produced by the accidental spirting of matter into the eyes of nurses engaged in syringing the organs of the boys in the Royal Military Asylum. Dr. Guillié introduced the discharge from the eyes of children suffering from purulent conjunctivitis under the eyelids of four blind children, and the disease was in each instance produced. Dr. Vetch lays it down as an axiom in the commencement of his chapter "On the purulent ophthalmia of the British army," that from whatever cause inflammation of the conjunctiva may originate, when the action is of that nature or degree of violence as to produce a puriform or purulent discharge, the discharge so produced operates as an animal virus when applied to the conjunctiva of a healthy eye. Graefe frequently produced the disease in dogs and cats by the application of the matter to their eyes; and finally the extension of the disease by the return of the British and French armies from Egypt to troops, &c., in Italy, Sicily, Malta, Gibraltar, France, and England, clearly prove its contagious nature, the progress of the complaint having been traced from the affected to the healthy detachments. Some, indeed, have contended that in Egypt, where the affection has been endemic for ages, it has never been considered contagious, and Müller failed in several experiments to communicate the disease to animals. A Mr. Mackesey also applied the matter from the eyes of three patients to his own eyes, then walked a mile or two, whilst a sirocco wind blew the dust and sand in every direction, and, finally, wore linen soaked in the discharge over his eyes all night, occasionally moistening its surface, and pressing it to ensure its contact with the mucous surface, without producing any severe inflammation. These objections, however, prove nothing, inasmuch as positive proof exists of its contagious nature.

Dr. Vetch found the time which elapses between the application of the virus and the appearance of the disease shorter than occurs in gonorrhœa; in one of Mr. Macgregor's cases it took place in twelve hours, and in three nurses in the order of five, seven, and ten hours subsequently. Dr. Vetch apprehends that the discharge possesses an infectious property as long as the lining of the lids remains red and villous.

Pathology.—The inflammation appears to produce, at a very early stage, a peculiar change in the lining membrane of the lids, which continues as long as the disease lasts, and, finally, assumes the shape of granular conjunctivitis. Professor Walther states that "the proper seat, the birth-place, the nest, of the disease, is always and in all its degrees the conjunctiva of the eyelids. Hence extends its destructive operation partly into the substance of the eyelid, partly to the eyeball, the conjunctiva oculi being the medium by which the disorder is conveyed to the proper tunics of the globe." The change consists in loosening and thickening of the palpebral lining, which, after some time, becomes reddish, velvety, and granular, with small vesicles interspersed, or an exanthematous structure difficult to describe. Finally, it becomes changed into a fleshy, sarcomatous, somewhat condylomatous mass, with an abundant purulent discharge. Müller describes three stages of the disease. In the first the conjunctiva lining the tarsi has a villous appearance and darkish red colour; these changes extending for about a line beyond the orbital edges of the cartilage; in the second it looks as if strewed with coarse sand, and has a more granular appearance. It may go on for weeks or months in this stage before it passes into the third or more serious gradation. In the third the disturbance is of a more violent kind, producing luxuriant morbid growths of granulations and warty elevations.

Treatment.—The *intentions* to be kept steadily in mind during the treatment of the more severe forms, are first and foremost to prevent the extension of disease to the cornea; secondly, to subdue the inflammation, and prevent its lingering in a chronic form; and, thirdly, to cure any remaining disease in the palpebral conjunctiva, which renders the patient constantly liable to relapse, and keeps up the infectious nature of the discharge. During the first stage and the earlier portions of the second, *blood-letting* is more especially advisable. There can be no doubt that, when the age and strength of the party admit, a full general bleeding, carried to the verge of syncope, is the most efficacious plan of treatment, and at the same time more economic of the strength than several smaller blood-lettings. Dr. Vetch found the early adoption of this treatment reduced the number of those in whom the disease advanced to the second stage, and rendered the symptoms less violent. The patient should be placed erect, sitting or standing, and bled from a moderate sized puncture in the arm, not only until the eye assumed nearly its natural appearance, but as a *sine qua non* until the cessation of all uneasiness. This treatment is almost sure to prevent the return of the severe symptoms, and the necessity of its repetition; and, says Dr. Vetch, in every case, however

violent the tendency of the disease may be, its destructive termination will infallibly be prevented, and with much less expense to the patient, than by smaller and more frequent bleedings. He says, further, that of 3000 patients it never failed when assisted by the other remedies mentioned. But venesection carried to this extent is, of course, not applicable in young children, or weak and sickly subjects.

In the severe and active disease venesection should be followed by a liberal applications of *leeches* around the eye, and in the milder forms *cupping* at the nape of the neck, or the use of leeches, must constitute the sole means employed for the abstraction of blood. The leeches should be placed at a moderate distance from the lids, and never on the lids themselves.

Purgatives should never be neglected in the earlier periods of the disease. An active purge of calomel with the potassio-tartrate of antimony may be administered at night, and followed by some suitable medicine in the morning, to the third or fourth time. *Tartar emetic* may be continued subsequently in nauseating doses, if the patient be of a powerful sthenic constitution; and in these cases the *diet* should be reduced both in quantity and quality. On the contrary, if the patient be very debilitated and cachectic, a generous diet with *tonics* may be absolutely necessary, especially at the commencement of the treatment. In all cases the *head* should be kept considerably *elevated*, and the eyes *freely exposed to the atmosphere*. So favourable an opinion did Dr. Vetch entertain of the effects of a free exposure to the atmosphere that he says he would even, in favourable weather, risk the delay of a journey in the early stage, provided that the eyes were freely exposed to the air, and that he never saw any other than the best effects attend a change of place even when the second stage had commenced.

Simultaneously with the use of bloodletting the *external* skin of the eyelids should be carefully blackened by the *nitrate of silver;* this simple operation being repeated, if necessary, every third or fourth day. As far as my own experience extends, I have found infinitely more benefit attend the external application of this remedy than its introduction in any shape or form between the lids. No period is too early for its use, nor any too late, as long as the palpebral linings present any vestiges of the disease. The discharge should be washed away from between the lids frequently by a solution of half a drachm of *alum* in a pint of decoction of *poppy-heads*, or a weak solution of the liq. sodæ. chlor. The purulent forms of conjunctivitis are the only diseases of the eye which admit of the introduction of powerful remedies between the lids, with the view of setting up a new pathological action. Strong solutions of nitrate of silver are those most generally recommended. Dr. O'Halloran rubs the inner surface of the eyelids with sulphate of copper, or drops a solution of nitrate of silver into the eye; Müller recommends solutions of sulphuric acid or acetate of copper; Mr. Briggs the oleum terebinthinæ; Dr. Vetch the undiluted liquor plumbi diacetatis, &c. Mr. Guthrie advises that ten grains of nitrate of silver, reduced to an impalpable power, should be incorporated with a drachm of hog's-lard, adding fifteen drops of the liq. plumbi. diacet., to ensure its complete trituration. This ointment is to be applied after the discharge has been washed away, and the lids moved freely up and down, till whiteness of the conjunctiva be produced. I would remark that if such measures be employed, it should not be till after the activity of the symptoms be reduced by depletion, nor should they be continued if violent chemosis and deep-seated pain of the eye come on. My own observation leads me to say that pure astringents are more valuable than stimulants as external applications, and hence that five or six grains of alum to the ounce of water is safer and more efficacious than the nitrate of silver. When these remedies are employed the discharge should previously be washed away by the solution of alum in poppy-decoction, and then carefully introduced between the lids, either by a quill, camel's-hair brush, or drop by drop, repeating these proceedings two or three times a-day.

In the second stage, where the local disease has advanced to the production of complete chemosis, all ordinary modes of treatment constantly failed in Mr. Tyrrell's experience, which induced him to adopt a plan for its relief, most gratifying in its results, and simple in its application. (Tyrrell's Treat., vol. i., pp. 72-5.) This remedy was free division of the chemosed part, so as to relieve the tension of the conjunctiva, and to allow of the escape of fluid from the subjacent cellular tissue, and thus get rid of that which he conceived to obstruct the circulation of the cornea. The incisions are to be made through the sclerotic portion of the conjunctiva and its subjacent cellular tissue, in a radiating manner, beginning at the margin of the cornea and extending towards the edge of the orbit, but avoiding immediately the transverse and perpendicular diameters of the globe, that the larger vessels passing to the cornea might not be injured. Mr. Tyrrell has found this treatment successful beyond his expectations, invariably saving the cornea in the most violent cases if it has not previously suffered, or preventing any increase where mischief has already been produced.*

* The suggestion of Mr. Wardrop to give relief to the distention of the eye by eva-

In the third stage, when extensive ulceration or sloughing have taken place, any examination of the organ should be conducted with the greatest caution and delicacy, taking care not to press on the eyeball itself; since a rough and violent mode of proceeding is almost sure to force out the lens and humours, and destroy the organ. It is well to employ some simple cerate or dilute ung. hyd. nit. oxyd. melted, along the edges of the lids, night and morning, in those stages where the lids *adhere* to one another. Where the disease is mild or confined to the *lids*, local blood-letting by leeches, &c., may be sufficient, with one or more active aperients, the nitrate of silver externally, and the dilute alum collyrium to the conjunctiva.

Preventive Measures.—These consist of a careful avoidance of the predisposing and exciting causes: hence the apartments or buildings occupied should not be crowded, and due attention must be paid to cleanliness and ventilation, avoidance of other affected individuals, &c.

GONORRHŒAL CONJUNCTIVITIS.

Synonyms.—Gonorrhœal ophthalmia, gonorrhœa oculi, Benedict. Ophthalmia gonorrhoica vera, Beer. Blephar-ophthalmia.

Almost all the symptoms and consequences (excepting, perhaps, the condition of the lining membrane of the lids) are essentially similar to the foregoing form in the gonorrhœal conjunctivitis, only more violent. Mr. Lawrence (Ven. Dis. of the Eye, and Treat., &c., p. 269, &c.,) distinguishes two varieties of the conjunctival disease—the *acute* and the *mild*.

The acute variety is one of the most violent and rapidly destructive inflammations to which the eye is subject, and is attended by a discharge similar in its commencement, progress, and appearances, to ordinary gonorrhœa, with which it is always connected. The disease is comparatively uncommon, but affects the male much more frequently than the female, and the right eye* than the left.

The *symptoms* are nearly similar to those of the more violent cases of purulent ophthalmia. The affection presents three stages; the first consisting of inflammation with but slight increase in the discharge; the second of a profuse, thick discharge of yellow pus; and the third, of an extension of morbid action to the cornea. The swelling of the conjunctiva is more considerable than in purulent ophthalmia, and the chemosis so great as, in many cases, nearly to hide the cornea. The eyelids are also greatly swollen, particularly the upper, which hang over, and sometimes completely covers the lower. In general the redder the external skin the more violent will be the inflammation. At first the discharge is thin and in small quantity, becoming thicker, more abundant, and yellow in proportion to the violence of the disease. Lastly, the patient complains of the most severe and agonising pain in the eye and head when the cornea becomes affected. The duration of these stages varies under different circumstances; the two first are generally short, and it is not till the commencement of the third that the patient usually applies for relief.

It will be unnecessary to go over again the *effects* of this inflammation, which are exactly the same as those described in the previous division; but as *sloughing* of the *cornea* is much more common in gonorrhœal conjunctivitis, I will pause to describe its phenomena more minutely. Previous to any loss of vitality in the cornea it becomes dull and cloudy, from an imperfect degree of opacity and loss of its reflective powers, being either general or especially marked in that portion about to slough. As soon as it has ceased to form a part of the living frame it becomes perfectly dull, opake, and somewhat buff-coloured, resembling at first, as Mr. Lawrence remarks, a portion of wetted leather. As soon as sloughing stops, or is arrested, it becomes separated by a well-defined line from the rest of the cornea, which, in part, regains its normal appearance, whilst the slough is loosened and appears ragged and soft. The extent of the slough varies considerably: it may consist of the whole cornea, two-thirds, one half, or less, either extending completely through all the layers and the membrane of Descemet (aqueous capsule), so that on its separation the lens and capsule are exposed, or leaving the aqueous membrane entire, it is then protruded forwards in the shape of a transparent vesicle termed *ceratocele*; or finally the cornea may slough layer by layer, the event depending mainly on the condition of the conjunctivitis, and of the patient's health.

Diagnosis.—In gonorrhœal conjunctivitis the phlyctenular and granular condition of the palpebral lining is absent, and it does not lead to the chronic form of granular conjunctivitis. In a case of the gonorrhœal form which Mr. Lawrence saw in the very outset, the complaint began at once in the conjunctiva oculi, whilst the purulent variety commences in the lids. I believe, however, that a disease identical with, or, at all events, not to be distinguished from, gonorrhœal

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cuating the aqueous humour through a puncture of the cornea, is more ingenious than useful, inasmuch as the fluid is reproduced in a few minutes, and the cornea healed in a few hours; in fact, I have never seen the proceeding *of the slightest benefit*.

* M. Carron du Villards remarks that the inoculated disease almost always affects one eye, and he has observed that in left-handed individuals it was the left eye which was affected, and *vice versâ* (Guide Pratique, vol. ii., p. 542).

ophthalmia, may be produced by the application of leucorrhœal matter, or any acrid, unhealthy muco-purulent discharge, to the conjunctiva.

Prognosis.—The prognosis is more unfavourable in this form of the affection, from its rapidity, severity, and destructive consequences, so that irreparable mischief has often been effected before medical aid is obtained. If seen at its commencement, or shortly after, it holds out a fair opportunity for treatment to be successful, but even under these circumstances it is well not to promise too much. Out of the fourteen cases related in Mr. Lawrence's "Treatise on the Venereal Disease of the Eye," loss of vision took place in seven, from sloughing, suppuration, or opacity of the cornea. In two of these one eye was lost. Sight was restored in the remaining five cases, with partial opacity of the cornea and anterior adhesion of the iris in three of the number. When both eyes are successively attacked it is generally less severe in the second.

Causes.—The subjects to be inquired into are, first, whether the disease originates in actual contact of gonorrhœal matter; secondly, whether it has a constitutional origin; thirdly, if it arise from metastasis; and fourthly, if sympathy has anything to do with its origin.

With respect to the first consideration, Jacob reports a case in which gonorrhœal conjunctivitis was produced by the direct and accidental contact of matter from the urethra of the patient himself, then suffering from gonorrhœa. Wardrop, Lawrence, and Delpech, have detailed cases of a similar nature; as also others in which the disease arose, and pursued afterwards a course fatal to the organ, in consequence of the eye or its appendages having become infected by the contact of a towel or sponge used previously by gonorrhœal patients. These cases, however, are exceptions; in the great majority the disease cannot be traced to any application of infectious matter, so that some other cause must exist.

Has it a constitutional origin? Gonorrhœa is, at first, a strictly local disease, and may exist for some time, go through different stages, and at length terminate, still retaining a strictly local character; but in some individuals it undoubtedly gives rise to a series of severe constitutional symptoms. Such are prolonged and severe rheumatic inflammation of the synovial membranes (gonorrhœal rheumatism) conjunctivo-sclerotitis, and iritis, which I shall describe hereafter.

Now, I believe that gonorrhœal conjunctivitis is generally one of the earlier indications of constitutional contamination, and my view is strengthened by the very curious train of symptoms in cases related by Sir B. C. Brodie, Mr. Lawrence, &c. These cases commence with discharge from the urethra followed by purulent ophthalmia, and this, again, by rheumatism in the synovial membranes, with or without inflammation of the sclerotic and iris, lasting for many weeks or months. *Without any fresh infection* these attacks recur again and again in the same individual. The phenomena do not, however, always ensue in the same order, for now the purulent ophthalmia may be the first symptom, followed by the rest. One gentleman mentioned by Sir B. Brodie had suffered as many as nine attacks in the course of twenty years, in three of which purulent ophthalmia were the first symptoms. Mr. Lawrence (On the Eye, p. 279) is inclined to refer the occurrence of the ophthalmia to the state of the constitution, without being able to point out in what that state consists, and to regard it as a pathological phenomenon analogous to those successive attacks of different parts which are observed in gout and rheumatism. He has never seen the disease, arising from constitutional causes, in the female, although direct infection operates equally on both; and Beer states that he has observed it only in young, robust, and plethoric men. Mr. Lawrence attributes the exemption of females to differences in constitution, and to the different morbid influences exerted by the urethra and vagina.

Does gonorrhœal conjunctivitis ever arise from metastasis? Beer, Scarpa, Richter, and others, attribute the disease to this influence. They state that the original gonorrhœal discharge is suppressed, and that the ophthalmic affection occurs in consequence. This is the opinion, also, of physicians of the modern German school, who recommend, in consequence, as one of the principal indications for treatment, that the urethral discharge should be restored. In the inaugural dissertation of Dr. Scherrer, of Baden, he mentions, as his second indication for treatment, "Effluvium mucosum urethrale suppressum restituatur oportet." According, however, to the experience of several British practitioners, which fully accords with the little experience I have myself had of the disease, the discharge is not suppressed; and if the term metastasis be meant to signify merely a change of seat, it is obviously incorrect in the present instance; but if something more be signified—some influence mysterious and unexplained—I must confess myself most hostile to the theory.

The fourth consideration is sympathy between the urethra and conjunctiva. Dr. Scherrer takes this view of the case where gonorrhœal conjunctivitis arises independently of infection or metastasis; and Mr. Middlemore partially supports that view. I have no hesitation in saying that such an opinion is unfounded and incorrect.

Treatment.—The measures treated of at length in the previous division of purulent ophthalmia should be adopted with decision

and energy. In the early stages, venesection, carried far enough to influence the constitution decidedly, should be adopted *once*, in all cases being guided by the constitutional powers of the patient and his state and condition; but reducing the powers by frequently repeated depletion is unnecessary and injurious. The same *local* measures are necessary as in purulent ophthalmia, and Mr. Tyrrell's plan of *scarification* is even more advantageous here than in that variety. M. Decondé, from numerous experiments, both on animals and on himself, infers—1st. That chlorine and the chlorurets are certain disinfectants for gonorrhœal and ophthalmic contagions, and that they are to be preferred to all others. 2nd. That to preserve soldiers free from ophthalmic infection it is not enough to use lotions, but that the atmosphere itself should have chlorine suspended in it. 3rd. That medical attendants who finger affected eyes should dip them in chlorine to prevent the carrying of virulent matter from one to another, and that the same recommendation must be given to those who handle parts affected with gonorrhœa (L'Examinateur Médicale, Oct. 24, 1841).

Mild form of Gonorrhœal Conjunctivitis.—All the symptoms are less severe in this form: the redness is less intense, the membrane less swollen, and the discharge varying from a few streaks of whitish mucus, which adhere to the eyelids and lie between the lids and globe, to a tolerably abundant muco-purulent secretion of a yellow colour. The complaint yields readily to mild antiphlogistic treatment, aided by the local use of astringents, or of the nitrate of silver solution, and, when properly managed, is rarely attended with much danger to the organ, even in its most violent shape. I have seen this mild type of the disease more than once in the female.

Purulent Conjunctivitis of New-born Infants.

Synonyms. — Ophthalmia neonatorum, purulent ophthalmia of infants.

This severe and often fatal disease of the eye—fatal to vision from culpable or ignorant neglect—occurs soon after the birth of the little patient, usually from within two to four days; although a form of the same disease, not to be distinguished by the symptoms, may come on when it is several weeks old. There are, in fact, two species, one arising from the application of irritating matters to the eyes during parturition, and which comes on shortly after birth; the second originating in common causes, and not appearing until after some weeks have elapsed.

Slight indications of irritation are first experienced about the lids and eye, which the nurse comforts herself and the parents by calling a mere "cold." The lids become slightly red and vascular, the eye is closed and the light distressing, whilst a little mucus collects about the inner canthus and eyelashes, and, by drying, glues the lids together. If the conjunctiva of the eyelids be examined in the early stage it will be found of a bright-scarlet colour, and of a soft, thick, villous appearance, showing that this is the tissue in which the disease commences. Lachrymation and sneezing on exposure to a bright light sometimes attend this stage. These early symptoms remain without change for various periods of time in different instances; sometimes passing on to the conjunctiva of the globe in twelve hours, and sometimes remaining without material change for several days. As children are sometimes born with opake corneæ, it has been supposed that the disease sometimes occurs before birth. Sooner or later, however, if the disease be neglected, it passes on to the conjunctiva oculi, and manifests all the worst symptoms of purulent ophthalmia. The inflammation and redness extend to the external skin of the eyelids, which becomes greatly swollen, tense, and smooth, being an increase of the slight redness and vascularity which is one of the earliest symptoms. The slight mucous discharge becomes converted into an abundant secretion of pus, which is apt to accumulate between the lids and to stream over the cheek when these are separated, sometimes becoming bloody during the height of the affection and changing to a foul sanious ichor when the cornea has extensively sloughed. With these exceptions, in all the examples I have seen, and they are very numerous, the discharge has been of a bright-yellow colour. The swelling of the palpebral conjunctiva is so great that the upper lids often become everted from the action of the orbiculares, especially by the child's crying, or during an effort to examine the cornea. Such an eversion should always be rectified at the time; for, if neglected, the deformity is frightfully increased by partial strangulation, and may then be difficult to reduce.

If the inflammation be unchecked it extends to the cornea and speedily involves that tunic, and, through it, the deeper tissues, in some of those injurious or destructive processes which I have already enumerated. The most frequent, as far as my own observation extends, are, opacity, sloughing, and ulceration, or a combination of the two latter. Previously to sloughing the cornea loses its polish and becomes cloudy. This disease destroys vision most commonly in a gradual manner, not by a slough of very considerable extent and through the whole depth of the cornea at once, but by a succession of sloughs; the last lamina of the cornea, on sloughing or being protruded by the pressure from within, ulcerates, allowing the iris to escape, and sometimes advancing

till the lens and humours are evacuated and the globe collapses.

When the cornea has been irreparably injured, or sloughed to some extent, the acute symptoms subside. The lids lose their tension and bright colour, the skin being wrinkled, hanging loose, and of a dusky hue; the bright redness and swelling of the conjunctiva subsides, and the discharge becomes thin, dark-coloured, and scanty. In this stage we can see the changes which have previously occurred and the condition they are in at present, and can follow either their extension or improvement.

The constitutional symptoms are not considerable during the early stages of the disease, but they become severe when the cornea is attacked. There is great restlessness, want of sleep, and crying; the bowels are much deranged in some cases; and, as severe lesions are produced, the expression becomes haggard, the face pale, and the strength much reduced.

This form of conjunctivitis affects both eyes, although it generally commences in one; or, both eyes suffering together, one is for some time more severely affected than the other. The time occupied by the disease in its different stages varies considerably in different cases; altogether, it may last from one to two or three weeks. It does not give rise to the chronic granular inflammation of the conjunctiva of the lids, as occurs in the adult.

Prognosis.—Dr. Jacob (Loc. cit., p. 216) states that he thinks it probable that the loss of vision from this cause is four times greater than that from all the causes of common purulent and gonorrhœal ophthalmia put together; and Mr. Lawrence (On the Eye), that it causes more blindness than any other inflammatory disorder that happens to the eye. The reason of this frequency in the injury to vision does not so much depend on the intractable nature of the disease as in the lamentable ignorance and prejudices of nurses, and, but too frequently, of medical attendants. The affection is allowed to proceed, under the persuasion of its being a mere "cold," and the topical application of a little warm water to the lids is all that is adopted, too frequently, till either the cornea is densely opaque or has suppurated, ulcerated, or sloughed. We may often determine the condition of the disease and form a prognosis without looking at the cornea; as long as the lids are tense, shining, and florid, the cornea is free from irremediable changes, although on the verge of destruction; but if they are purplish, relaxed, and corrugated on the surface, with a thin, scanty, and offensive discharge, we may be sure that the cornea is partially or entirely destroyed. Under either of these circumstances, however, the medical attendant should warn the friends of the danger of an opacity, or of destruction of the organ following; for, as Dr. Jacob remarks, if he dismisses the patient without this precaution, or if he makes any application to the eye without explicitly announcing the extent of the injury, the reproach of having blinded the child will be fastened on him by those who, from culpable neglect, ignorant confidence in their own opinions, or sordid love of money, had caused so lamentable a misfortune.

The danger is not dependent on the intractibility of the disease, for there is a singular contrast between its violence and the rapidity with which serious effects are produced, and the certainty and readiness with which it yields to timely and proper treatment. Out of several hundred cases of the disease which I have seen I am not acquainted with a single failure when treatment was commenced previous to the cornea being involved; hence the prognosis is very favourable when the case is seen sufficiently early. At the early stage at which this disease occurs, absorption and deposition are carried on with such vigour and activity that lesions which, in the adult, would have proved fatal to vision and permanent in their duration, are often partially or entirely removed in the infant.

Causes.—The disease may arise in the infant, as well as in the adult, from the application of highly irritating matters to the eye, as the leucorrhœal or gonorrhœal discharge, or from the operation of common causes. I believe that that form of the disease which comes on almost immediately after birth *invariably* depends on direct infection, either from a gonorrhœal, chronic leucorrhœal, or stimulating mucous discharge from the mother's vagina being applied to the infant's conjunctivæ. Although the mother may not have suffered either previous or subsequent to parturition from gonorrhœa or leucorrhœa, the discharge which lubricates the parts during labour may become preternaturally stimulating when excessive vascular excitement exists, and in all cases I believe that a careful inquiry will detect one or other of these causes.

The disease is most frequent and destructive in weak and delicate children, and among the children of the poor, and proportionably rare among those of the higher classes. It is more common, also, in premature infants and in twins, in cold and damp weather, and in foundling hospitals. Langenbeck (Neue Chirurg. Biblioth., b. 3, page 208) states the curious fact, however, that in the lying-in hospital of Vienna, where the mothers are generally labouring under either leucorrhœa or gonorrhœa, but where the infants remain with them, the disease is not common; while in the foundling hospital, where the infants are deprived of their mothers, and are often half dead from

cold and starvation before they are received, it is very prevalent.

Treatment.—At the West of England Eye Infirmary this disease is treated by a weak solution of alum to the lids and conjunctiva, aperients, and suitable constitutional measures, without leeching, scarification, or nitrate of silver; and so successful has this treatment proved, that during the years I attended this institution I never knew an instance of failure, unless the cornea had become involved before it was instituted.

The majority of practitioners recommend the application of one or two leeches, either to the swollen upper lid or near the eye, especially in robust and plethoric infants, but, as far as I have seen, this is always unnecessary, and in the majority of instances positively injurious (see predisposing causes). I find that the experience of M. Reveille-Parise leads him to condemn the use of leeches, blisters, and emollient applications. (Med. Chir. Rev., July, 1842, p. 188.)

To regulate the *bowels* nothing answers better than small doses of mercury with chalk, with powdered rhubarb, one grain of the former with two or three of the latter, repeated according to circumstances. Where the infant is several weeks old, and a more active aperient is required, scammony may be combined. In very feeble and sickly children it may be necessary to give *tonics* from the very commencement, and when the cornea has sloughed and exhaustion resulted, upholding the strength gives the only remaining chance of preventing the repeated occurrence of the same mischief to fresh portions of the tunic. Perhaps quinine is the best remedy under these circumstances,—a grain may be well mixed with about sixteen grains of powdered white sugar, and divided into eight powders. Mr. Tyrrell has found Battley's solution of yellow bark of great service, in the proportion of one or two drops, with syrup, and Mr. Lawrence recommends the resinous extract.

To *cleanse* the eyes a very dilute solution of the liq. sodæ. chlorid. may be employed, thrown with the greatest gentleness first against the lids, and then between them. The utmost injury may be induced by unnecessary violence, and therefore large powerful syringes should not be employed. The glass syringe I possess is so constructed that it would be impossible to throw the stream of fluid with a violence sufficient to occasion mischief. Two or three times a-day a solution of *alum*, containing one or two grains to the ounce, should be dropped between the lids, after washing away the purulent secretion. From the very first I should be inclined to paint the *external skin* of the eyelids with *nitrate of silver*, using a solution of five grains to the ounce, and passing it once carefully over the lids by means of a camel's-hair brush, repeating it, if necessary, with an interval of a few days. To prevent the adhesion of the lids we must also order a little simple *cerate* to be liquefied and passed along the tarsal margins night and morning. In all cases the prophylactic measure should be carefully taken of cleansing the eyes of newly-born infants from collections of mucus or other adherent matters.

Granular Conjunctivitis.

Synonym.—Granular conjunctiva.

Definition.—Inflammation of the conjunctiva, attended by a gradually augmenting and extending papillary roughness or inequality of surface, accompanied with a secretion of mucus.

I shall describe two varieties of the disease—the active and the passive—the intervening chasm being filled up by every intermediate grade in nature.

Active Form.—After a severe, or in some cases a peculiar inflammation (vide purulent ophthalmia of adult) of the palpebral conjunctiva has existed for some time, an unpleasant sense of roughness or rubbing on the ball of the eye, on any of its motions, is complained of, producing increased lachrymation, vascular distention, spasmodic closure of the lids, with much distress and pain, and rendering the eyes almost useless; this assemblage of symptoms, when less severe, the patient calls weakness of the eyes. If we invert the lids in this stage and hold them a little way removed from the globe of the eye, we shall find that the changes of granulation have commenced in that portion of the conjunctiva reflected from the globe to the lids—at the angle of its reflection—commencing in the upper lid, and always progressing with greater rapidity and severity in that situation than in the lower. The granulations are small, more or less conical, firm, very vascular, and of a bright scarlet colour; the conjunctiva oculi opposed to these are vascular, and also scarlet; whilst the lids appear swollen and vascular externally, with intolerance of light and lachrymation. In more chronic and slighter cases the projections are very firm and of a lighter colour. As Müller (Erfahrungssätze, p. 37) justly observes, their colour varies according to the degree of inflammation; hence we see all gradations, from the darkest blood-red to the palest brick colour.

As the disease proceeds these symptoms increase in severity, and others, which are constitutional, become superadded. The irregular prominences advance towards the edges of the lids, until the whole surface of the palpebral conjunctiva becomes eventually crowded with small, firm, elevations, more or less conical, many of them, however, very rough and irregular, and some larger than others.

The progress and completion of these changes in the palpebral conjunctiva are not

only attended with the mere local symptoms of inflammation and change of structure, but in addition, with those which result from the substitution for the naturally smooth and beautiful soft surface of the healthy conjunctiva, of a rough, inflamed, and thickened membrane, constantly rubbing over the front of the cornea and conjunctiva oculi. The constant mechanical irritation of these parts leads to great distention of their vessels and chronic inflammation of their structure; they become thickened, highly sensitive, and very vascular, whilst the front of the cornea is rendered cloudy and rough on the surface from vascular opacity. A few large scarlet trunks, with several smaller diverging branches, ramify in its structure, increasing in number in proportion to the activity of the affection, with a proportionate increase in the thickening and opacity of the tissue, until in very severe cases it acquires the name of *pannus*. In some cases there is much intolerance of light, attended with profuse lachrymation and spasmodic closure of the lids. The inflamed conjunctiva pours out a scanty but thick muco-purulent secretion, which glues the lids together during the night, and which may be seen on and between the granulations themselves.

The patient complains of a very severe superficial burning pain in the eyes, with a sensation of sand and roughness, weight over the brows, and frequently general headach; and from the opacity, intolerance of light, and spasm of the orbiculares, almost complete loss of the use of the organs. A chronic febrile condition of the system accompanies the more severe cases, denoted by a hard pulse, impaired digestion, dry skin, and nocturnal chills, followed by heat and thirst.

Passive Type.—In this form of the complaint the symptoms commence and progress in the same way as I have already explained, but when fully formed the irregularities of surface produced are much larger (in the aggregate), softer, and smoother, though irregular in shape, or of a dark or sometimes very pale livid colour, and bathed in a profuse watery mucous secretion. The effects of such bodies on the surface of the globe are much less severe than in the active form; the conjunctiva eventually becomes thickened and loaded with dark-coloured vessels, and the front of the cornea irregular and semi-opake; but there is comparatively little pain, no lachrymation, and little if any intolerance of light, or spasmodic closure of the lids. In many of these cases the whole structure of the lids is œdematous, of a dark colour, and loaded with vessels.

In all these patients the general health is more or less deranged, hectic fever being present in the severest cases. We find the tongue loaded, the breath offensive, the digestion disturbed, the bowels irregular, the skin either pale, relaxed, and moist, or dry and harsh, the perspiration partial and offensive, the urine unnatural, with other similar phenomena. In a few cases more decided symptoms of anemia are present, such as pallor of the countenance, lips, lining of the mouth, and general surface, with a feeble, jerking pulse, &c.

Granular conjunctivitis affects both lids, its progress is slow, and its removal a work of time, however judicious the treatment. Its duration is very uncertain, but in general it is a disease of months or years rather than weeks, for, whilst any vestiges of the palpebral disease remain, the patient is liable to relapse from unfavourable conditions of the weather, imprudence in diet, alterations in the health, &c. The chief *effects* are pannus, ulceration of the cornea, inversion, eversion, and other chronic affections of the lids.

Causes.—The most fruitful source of this disease is, undoubtedly, purulent or muco-purulent ophthalmia (not infantile or gonorrhœal). I have seen several cases which have originated solely in the indiscriminate and repeated use of the nitrate of silver, introduced between the lids, either as a strong solution or in substance. They have commenced with some trifling conjunctival affection—a little pain or roughness—which the patients disregarded, until they accidentally passed some eye infirmary, or called in some medical attendant of the family in which they were servants; but in every instance they positively denied having suffered from anything more than slight pricking, redness, and feeling of sand in the eye until they became the victims of the use of what they termed "hot drops," and which, when placed between the lids, caused them most dreadful suffering, generally lasting for some hours after each application.

Pathology.—The nature of the disease is essentially inflammatory, since it originates in inflammation, and is cured by the same means which relieve that process and its consequences. It has not the remotest connection with "granulation," as the term is employed in connection with the repair of ulcerated surfaces—for such never springs from a sound surface—nor does it ever essentially consist of enlargement of the Meibomian follicles, since it commences in and spreads from the reflection of the conjunctiva to the lids, where these glands are absent, and does not assume the shape and direction of these bodies. The granulations are, in fact, nothing more than the natural papillæ of the palpebral conjunctiva enlarged, partly from inflammatory engorgement of vessels, and partly from the interstitial deposition and organisation of lymph.

Treatment.—A judicious combination of local and constitutional treatment proves far preferable to either separately. In the active form of the complaint blood may be taken locally, either by cupping from the back of

the neck, or by the application of leeches around the organs, repeated as frequently as the circumstances of the case may suggest. Blood may also be drawn locally by dividing the inflamed blood-vessels themselves, scarifying the palpebral conjunctiva, or shaving off the inequalities to a level with the surface. In performing this operation the lid should be everted, and the conjunctiva cut with the shoulder of a lancet, that is, drawing the edge from its fixed extremity towards its point. It is true that the granulations are reproduced as long as the inflammation on which they depend continues, but the operation is useful, and leaves no inequality of surface when skilfully performed, after the cure of the disease. In the passive type, however, blood-letting is uncalled for. In some cases a gentle action of mercury on the gums is beneficial.

Astringent applications to the conjunctiva are valuable remedial measures, but they require adaptation to obtain their full effects. A very dilute solution of the acetate of lead (two grains to the ounce) is best suited to very acute cases, and the undiluted liq. plumb. diacet. to the more passive, managing the intermediate forms according to their characters.

In some very mild cases nothing more is required than to evert the lids, and to rub the surface of the granulations with the sulph. cupri, keeping the lids everted for some minutes after its use, and washing the cauterised surfaces with a gentle stream of tepid water from a syringe before we replace them.

Dr. Hays, of Philadelphia, has found a saturated solution of common salt contribute more to the cure of chronic granular ophthalmia than any other application. He says that it affords more marked and prompt relief than any other remedy, when the eye is irritable, with injection of the conjunctiva oculi, and lachrymation.

As far as I have seen no local remedy is so beneficial as the application of the nitrate of silver to the external skin of the eyelids, combined with attention to the health.*

* In many chronic derangements of the health with hepatic disorder, the extract of taraxacum, and inspissated ox-bile, are highly valuable remedies. I had occasion to recommend their employment under the head of chronic simple conjunctivitis. By far the best preparations of these I have seen are manufactured by Mr. Hooper, pharmaceutical chemist, of Pall-Mall East, who employs but a very moderate degree of heat in the evaporation.

(*To be continued.*)

ACETATE of lead is a common injection in gonorrhœa; in the female it is most efficacious, but in the male it is very inefficient. —*Mr. B. Lucas.*

ON

ANIMAL HEAT;

COMPRISING AN ATTEMPT TO RECONCILE THE FACTS ATTENDANT ON ITS DEVELOPMENT, WITH A PHYSICAL PRINCIPLE OPERATING TO PRODUCE IT,

HITHERTO OVERLOOKED.

BY

JAMES W. WINTER, M.R.C.S.L., Guildford.

A CONSIDERABLE share of experimental research and philosophic attention has been directed, at different periods, to the discovery of the causes operating within the living animal, by which it acquires and maintains an independent heat, so wonderfully regular in its supply and consumption.

Amongst the illustrious men who have endeavoured to withdraw the veil with which nature has enveloped this remarkable process are found Boyle, Priestley, Black, Hunter, Home, Crawford, Lavoisier, Franklin, Davy, Brodie, and Magendie,—a satisfactory proof that the investigation has not been hitherto considered valueless. Did the laws which regulate the thermal properties of animals admit of direct proof,—if it were possible satisfactorily to ascertain by what powers they are governed,—the inferences from such data, could they be established, would be of the first importance to the physiologist and practical medical man. "An inquiry," says Crawford, "into the causes which maintain the balance of heat in the animal economy, will probably give rise to improvements in the prevention and cure of diseases." (On Animal Heat, p. 438.)

2. The source of animal heat, whether it be supplied by chemical, vital, or purely physical action, has been a most fertile subject of theory; but no position which has yet been assumed is considered fully explanatory. The celebrated John Hunter, who carefully examined the subject in all its bearings, declared himself dissatisfied with all the hypotheses which had been adduced to explain it. "The theories hitherto brought forward do not in the least satisfy me, as I think that none of them accord perfectly with every circumstance observable in these cases." (Hunter's Works, by Palmer, vol. iii., p. 16.) Müller, in his late physiological work, after reviewing the various theories promulgated on the subject, considers that some other supply of animal caloric is still undiscovered. Mr. Mayo is yet more confident "that the source of vital heat remains unknown." (Physiol., p. 96.) "No attrition," says Blagden, "no fermentation, or whatever else the mechanical and chemical physicians have devised, can explain a power capable of producing and destroying heat, just as the circumstances of the situation require." (Phil. Trans., 1775, p. 112.)

3. By this peculiar property the animal maintains a temperature apparently independent of extraneous circumstances, at once "constant, equable, and perpetual."

4. In the *human being* the degree of heat acquired is not so high as in some other classes of the mammalia. Blood heat is generally quoted at 98° of Fahrenheit's scale, but this is certainly beneath the usual internal temperature. Dr. Beaumont, by placing a thermometer in the stomach of living and healthy man, ascertained that the heat of that part of the frame averaged 100°. Müller found the temperature of the mouth and rectum to vary from 97.7° to 98.6°; while that of the more internal parts of the body was from 100½° to 101¼°. Dr. Thompson places it at 101°, and Magendie at 101.75° Fahr.

5. From the copious tables which Tiedmann has compiled of facts ascertained relative to the heat of different genera of the *mammalia*, it is seen that in some of them, such as the ox, horse, and elephant, the temperature is not quite so high as that of man; while that of the squirrel, the ape (*simia aigula*), the bat, and the whale, ranges rather above his natural standard.

6. The heat acquired by many *birds* rises considerably above that of the mammalia. In the common pigeon it is 106°, in the vulture 107°, and in the raven sometimes as high as 109.23°. Dr. Edwards found the heat of sparrows to range from 105° to 110°.

7. The temperature of the *cold-blooded vertebrata* is generally low; that of the amphibia and reptiles only a degree or two higher than the surrounding medium. This is not always the case, for in tropical countries the land-tortoises maintain a temperature considerably less than that of the atmosphere. "The temperature of the air of the Gallipagos Islands varies from 72° to 75°; that of the blood of the tortoise is always 62°." (Porter's Journal, p. 215.) Fishes usually support an internal heat slightly superior to the temperature of the water they live in. But some exceptions have been discovered. Dr. Davy found that the thunny (Thynnus pelamys) possessed a heat of 99°, when the surrounding water was only 80½° Fahr.

8. *Insects* develop a degree of heat governed mostly by the temperature of the medium in which they move. Mr. Newport, in his experiments on them, was always able to detect an independent temperature, which in some cases exceeded that of the atmosphere by 20°. When quantities of them associate together the heat produced is considerable. J. Hunter placed a thermometer in a bee-hive, and ascertained that the temperature varied in spring from 93° to 98°, and in the summer it reached as high as 104°.

9. *Plants* give satisfactory evidence of the possession of a temperature independent of external circumstances. When snow falls on plants the first part which melts is that immediately investing the leaf. On inserting the bulb of a thermometer into a hole cut in a tree the mercury invariably rises beyond that of the external air.

10. The use of the mercurial thermometer for measuring slight variations in the temperature of the animal, or of its different component parts, is not without a great liability to error. It is very difficult of application to the internal organs, without detriment to the experiment, and in many instances objectionable from the impossibility of its being affected unless it obviously abstracts a proportion of caloric from the tissue to which it is applied. On this account the experiments of MM. Becquerel and Breschet, who employed in their investigations on the subject of animal heat, the thermo-electric multiplier, which is free from the sources of error affecting the common thermometer, are worthy of the firmest reliance.

11. Most writers on animal caloric agree that the temperature of the fœtus is supplied wholly by the mother. This rests altogether on supposition. There is, however, some reason to doubt the correctness of it, from the fact of the cold sensation experienced by the parent on the occurrence of inter-uterine death.

12. It is asserted by Dr. Edwards and by Despretz that the actual temperature of newly-born animals is much lower than that which they subsequently are possessed of. According to the former a new-born infant raised the thermometer no higher than 94¼°. Something, however, ought to be allowed for evaporation. Dr. Davy found the temperature of the axilla of a child just born to be 98.5°; twelve hours afterwards it stood at 99°, and in three days was still the same.

13. In old persons the power of generating heat decreases with the decline of vital energy.

14. Many experimenters have observed a diurnal variation of animal temperature. It was seen to be lowest in the morning and highest towards evening. According to Anteurieth it is 1½° Fahr. lower during sleep than in the day-time.

15. Some have supposed that the process of digestion tended to increase the temperature, but from the peculiarly fortunate opportunity which Dr. Beaumont had of ascertaining the fact, it was found to be but slightly affected by the exercise of that function.

16. Dr. Granville has communicated some remarkable facts respecting the temperature acquired by the uterine system during parturition. From his statement it appears that the free caloric of these organs is then greatly increased. Occasionally he observed it to rise as high as 120° Fahr.; the

elevation always bore a proportion to the degree of action excited in the organ.

17. The external temperature of different parts of the body decreases in the ratio of their distance from the centre of circulation. Thus, a thermometer placed in the axilla of the human subject stood at 98° Fahr., when placed at the loins it indicated a temperature of 96½°, on the thigh 94°, on the leg from 93° to 91°, and on the sole of the foot it only reached 90°. It was also found that the brain possessed a lower temperature than the rectum.

18. Dr. Davy, Magendie, and Thenard, have asserted that arterial blood is superior in temperature to venous by 1°. This was ascertained by putting a thermometer into the right and left sides of the heart. Others have failed to discover this difference; and the late Professor Coleman stated that he had found the right side of the heart the warmest by 1° or 2° Fahr. Mayer found the temperature of the blood in the jugular vein to be from 2½° to 4½° Fahr. lower than that of the carotid, but he could distinguish no difference in the temperature of either side of the heart. MM. Becquerel and Breschet found with their thermo-electric multiplicator that the blood in the left auricle of a turkey was 1.62° Fahr. higher than the blood in the right auricle.

19. The heat of the body is depressed several degrees below the natural standard in the affection termed morbus cerulens, where the foramen ovale remains unclosed, and admits of a portion of the blood passing from the right side of the heart to the left without being transmitted through the lungs. In Asiatic cholera a thermometer placed in the mouth rises only to 77° or 79°. Coldness of the body is also symptomatic of hydrothorax, and of repletion of the air-cells with mucus, in chronic bronchitis. (Elliotson.) It is stated by Martine that long fasting diminishes the temperature. Dr. Currie, by placing a thermometer in the palm of the hand during syncope, ascertained that it stood as low as 63° Fahr. Mr. Earle asserted that the temperature of the hand of a paralysed arm was as low as 70° Fahr., while that of the sound side raised the mercury to 92°. On electrifying the diseased limb its temperature increased 7°. MM. Becquerel and Breschet could not succeed in detecting any difference between the sound limb and the paralysed one in a case of hemiplegia.

20. Under the influence of various circumstances the temperature of isolated parts of the body becomes temporarily exalted. The sudden local determination of blood, accompanied with increase of heat, produced by the operation of the mind, as seen in blushing, is carried often to such an extent as to produce a copious perspiration from the parts. "When a function is going on vigorously the temperature of the individual part rises." (Elliotson, Phy., 231.) MM. Becquerel and Breschet found the temperature of a scrofulous tumour raised as much as 5½° Fahr. above the general heat of the body. This fact is worthy of attention, as it had been previously asserted that in inflammation the part affected did not acquire a higher temperature than that of the internal parts of the frame. The same experimenters also observed that the heat of the body was exalted 5½° during a fever. The temperature of the body in a feverish state, according to Dr. Elliotson's observations, was often raised from its natural standard to 107° Fahr., and in tetanus he remarked it as high as 110° Fahr.

21. MM. Becquerel and Breschet observed that muscular contraction was attended with an exaltation of the temperature of the part to the extent of from 1½° to 3½° Fahr.

22. The animal frame maintains its caloric at very low atmospheric temperatures. During the northern expedition of Captain Parry the thermometer often stood so low as —52° Fahr.; it was usually at 32° below zero, at which time he found the blood-heat of some foxes which were caught was from 98° to 106½°.

23. Neither has external heat so great an effect in raising the animal temperature as might have been anticipated. We have already seen (7) that the land-tortoise of an equatorial island keeps itself much cooler than the surrounding atmosphere. Dr. Davy found that the internal temperature of the human body, when exposed to a tropical climate, was from 2.7° to 3.6° Fahr. higher than in the more temperate climates. The French naturalists appointed to the Bonite also investigated this subject. They made numerous experiments, and the inference from them was, that the heat of the human body rises and falls, in a slight degree only, with that of the external temperature; and that it falls slowly in passing from a hot to a cold climate, but rises rather more rapidly in returning towards the torrid zone.

24. Experiments have been instituted in order to ascertain the effect of high artificial heat on the animal economy. Blagden, Fordyce, Banks, and others, have exposed themselves to heated apartments, varying between 198° and 211° Fahr., and for a short time even so high as 260°. But they found that the body possessed capabilities of maintaining nearly its original temperature from the cooling effect of increased perspiration. That it was due to this circumstance was substantiated by De la Roche, who, having heated the atmosphere of an apartment, and at the same time saturated it with moisture, in order to prevent exhalation from the skin, found that the heat of the body when so exposed rose from 4° to 9° Fahr.

25. Having briefly directed attention to the principal facts which have been already

ascertained to accompany the exercise of this important function, it now remains to point to those means by which it is supposed vital heat is generated and supported within the body. Among the most popular and plausible of modern theories on the subject is the one propagated by the joint exertions of Lavoisier and Laplace. Knowing that heat often resulted from chemical changes in inorganic matter they ingeniously supposed that something similar occurred during the performance of the respiratory process, an animal function partaking of a chemical character. In this act the oxygen of the atmosphere combines with the carbon of the blood in the lungs and forms carbonic acid, which is thrown off during expiration. But by carefully measuring the quantity of carbonic acid so formed, and the quantity of oxygen lost, it has been ascertained that more oxygen disappears than is necessary to the formation of the carbonic acid. To meet this slight discrepancy it has been supposed that this portion of oxygen, which does not participate in the combination with the carbon, unites with the hydrogen in the blood, and forms water, which is exhaled. The theory of those who maintain respiration to be the main source of animal heat, is founded on the hypothesis that during these combinations a quantity of heat is evolved, which is immediately absorbed by the blood, and conveyed by its circulation to all parts of the body.

But it was urged by the doubters of the correctness of this theory that if this view was the true one, why was not the blood on leaving the lungs exalted in its temperature above what actually takes place. To obviate this objection Dr. Crawford supposed that arterial blood had a greater capacity than venous blood for caloric, and that the heat so generated in the lungs, and imparted to the arterial blood, became latent, and was not set free until this blood assumed again its venous character in the various parts of the body. The weakness of this course of argument was proved by Dr. Davy, who showed that the capacity of the two kinds of blood for caloric was nearly identical.

26. Some later theorists have imagined that the oxygen which the blood extracts from the air is combined with the carbon in the course of the circulation and not in the lungs. This view certainly accords with most of the facts noticed, but fails in providing sufficiently for the amount of heat acquired by the animal; and the general inference, from a most extensive course of experiments, is, that if the absorption of oxygen be a cause of vital heat, it can only be a partial one. "There must be other sources of animal heat besides respiration," says Müller. (Physiol., p. 92.)

27. To the organic secreting functions have been assigned, by some physiologists, an important part in the generation of animal caloric. They imagine that in the different secreting processes of the body, the fluids formed having a less capacity for heat than the from which they are separated, must be the means of rendering sensible heat that was before latent. This position has been denied by other examiners, who have failed in detecting the necessary difference of capacity for caloric between the secretions and the blood from which they are taken.

28. M. Pouillet supposed he had discovered another source of animal heat in the elevation of temperature which occurs on the moistening of solid bodies with different fluids. The increase of heat said to attend the process of digestion may be given as an example illustrative of his views.

29. As is generally the case when we are at fault in providing sufficient cause for any physiological or pathological difficulty, the nerves are resorted to in order to mask our ignorance. So in this case, some physiologists, despairing of discovering satisfactory proof of the source of vital heat, allege that it must consequently be nervous. That the temperature of a limb becomes less on the division of its nerves is no reason that animal heat should be necessarily supplied by nervous action. The section of a nerve diminishes the vital action of the part it supplies, and consequently may only operate indirectly. Hunter remarks that the power of generating caloric cannot "depend upon the nervous system, for it is found in animals which have no brain or nerves." (Animal Œcon., p. 104.) Acephalous fœtuses have been often known to maintain their heat for several days.

30. I will now proceed to detail a cause of animal caloric which appears to have been hitherto overlooked. It is founded on a discovery which I accidentally made,—that elastic substances, or bodies capable of reassuming their original shape when the power operating to extend them is removed, give out quantity of caloric proportionate to the mechanical tension to which they are submitted. It is probable that this manifestation of heat by elastic bodies, when stretched, is only a modification of the general laws regulating the production of caloric during the changes of form in matter generally,—some sudden alteration of the position or shape of the component particles thus rendering heat sensible which was before latent.

31. That elastic substances do thus eliminate heat when stretched, is proved by submitting a body so endowed, caoutchouc, for instance, to considerable tension, in close approximation to the bulb of a sensible thermometer, when, in proportion to the power exercised in dilating the body, will be the quantity of caloric set free, and its consequent effect on the thermometer. It is also proved in a yet more familiar manner by grasping firmly the ends of a large strip of gum-elastic, and stretching it across the chin,

when the heat evolved is immediately perceptible to the senses.

32. This curious property, inherent in elastic substances, is supposed to have a material effect on the generation of animal warmth. It is well known that many of the component parts of the living frame are endowed with a considerable degree of elasticity, and it is but reasonable to suppose that whenever this property is exercised within the body the same physical phenomena result as are witnessed outside it. The tissue composing the arteries is of a highly elastic nature. The same property is also possessed by the trachea and bronchial tubes, though perhaps somewhat less in degree. When these properties are called into play warmth is produced. On the contraction of the left side of the heart the column of blood occupying the arteries is suddenly increased, and a dilatation of their coats consequently ensues, forming the pulse. During every such dilatation of the arterial tissue throughout the body, a portion of caloric, governed by the power and extent of the expansion, is set free, and communicating itself to the blood spreads general warmth. The same thing occurs when the elastic property of the bronchial passages is called into action. Indeed, wherever elasticity is found, when exercised, the same effects invariably result. Muscular contraction, by which the fibres composing the muscles, are, by their own peculiar nature, thrown into a state physically analogous to the coats of the arteries during their dilatation, is likewise a fertile source of caloric.

33. But we have convincing proof that the elastic tissues of the body are capable of producing warmth. As the arteries maintain their elasticity after death, if we take, for convenience sake, a portion of the aorta of any large animal, the horse, for example, and close one end by tying it round a cork, and fix it to some weighty article, attach strings to the open end, in order that the warmth of the operator's hands may not interfere with the experiment, fill the artery with water at the temperature of the atmosphere to within an inch or two of the mouth, let fall into the water a delicate thermometer, note the temperature, and then by pulling the strings so as to call into play the elastic properties of the artery, we raise the mercury of the thermometer in a few seconds. But the small arteries piercing the coats of the aorta, by allowing the transudation of the fluid employed, produce a considerable degree of evaporation, which interferes with the correctness of the illustration; for on performing the experiment it will be noticed that soon after the operator ceases to exert the elasticity of the artery the fluid acquires a lower temperature than it before possessed. To obviate this source of error we may employ a tube of Indian-rubber, fixed and treated in the same way, and the increase of temperature will become more marked and lasting. In less than half a minute, by moderately calling into play the elastic nature of the gum, we can raise the mercury of the thermometer 4° or 5° Fahr.

34. Now, when it is taken into consideration that the elasticity of the arteries is incessantly at work throughout the whole bulk of the frame, it will cease to be a matter of surprise that warmth is generated. The extension of the arterial coats takes place both in length and in the direction of their diameter, but their elongation is much more considerable. Poiseuille invented an instrument for measuring arterial dilatation, which he found was about $\frac{1}{25}$rd of the arterial capacity. Hunter let a horse bleed to death, and found that the aorta had contracted to the extent of more than $\frac{1}{10}$th of its diameter, the iliac artery $\frac{1}{8}$th, the crural artery $\frac{1}{4}$rd, and that arteries of the thickness of the radial in man were completely closed.

35. It cannot, then, be denied that the arterial tissue plays an important part in the generation of vital heat. But, at the same time, it is also probable that the property of elasticity found in other parts of the body may materially assist in its elimination. By receiving this explanation we can readily account for the phenomenon of evolution of heat resulting from increased circulation, which was inexplicable on the respiratory theory alone. It explains why the warmth of old persons (13) diminishes. Their tissues gradually assume a less elastic character. The arteries themselves often become ossified in distant parts of the body, giving rise to gangrena senilis, from a loss of the elastic power and consequent diminution of temperature.

This view also accords with the facts noticed with respect to the diurnal variation of animal temperature (14), and also with its being lower during sleep; both being regulated by the intensity of the circulation.

That digestion (15), by rousing the powers of the body, should slightly increase its temperature, admits of explanation on the same grounds. The mechanical distention of the stomach, together with the contraction of its muscular fibres, may have a tendency to increase the effect produced by a vigorous circulation.

If it be a fact that cerulеans have a low degree of vital heat (19), it would certainly tend to justify the arguments of those who assume respiration to be a source of animal caloric, and it might go far to prove to what extent its influence prevailed. That disease, in which the circulation of the blood is obstructed and unnatural should produce a lower temperature is easily conceivable.

If the temperature of paralysed parts (19) is decreased, the wasting in bulk of a limb so affected shows evidently that the circulation is obstructed.

Obstructed circulation may also be referred to as the cause of the diminution of heat in various diseases, and in syncope (19), when the action of the heart is temporarily suspended.

The heat eliminated by sudden determination of blood produced by the excitation of the mental organism (20), may be viewed as resulting from a peculiar excitement, directing an increased flow of blood to the superficial arteries.

That muscular exertion should be productive of warmth (21) may, as has been before hinted, arise from the operation of two causes,—increased circulation through the muscular tissue, and throughout the body, when muscular action is considerable, and on a physical generation of caloric during muscular contractility.

In diseases where the action of the circulatory organs is unduly increased (20), and the countervailing influence of perspiration stopped, it is not surprising that the free caloric should be considerably above par. The same remark applies to the more circumscribed abnormal actions, as the tumour, wherein MM. Becquerel and Breschet discovered a considerable increase of temperature above that of the surrounding parts.

The great increase of temperature of the uterine system (16) during the act of parturition may be explained by the increased vascularity of the parts, and by their extraordinary dilatation originating an additional source of caloric. That the temperature of the parts of the body lessens with their distance from the centre of circulation (17) may be accounted for by the decrease of elastic arterial tissue as the arteries diminish in size, and by the greater comparative surface which the extremities offer for radiation.

Increased or diminished vascularity explains why the temperature of the brain should be lower than that of the rectum (17).

That arterial should possess a higher temperature than venous blood (18) is further confirmatory of the view I have taken. It is also probable that the slight difference of temperature of the blood in the two sides of the heart may be occasioned partly by the superior muscularity of the left side over the right, and partly by its passage through tubes possessing elasticity.

That animals preserve their caloric at very low temperature (22) is not at all incompatible with the view I have taken of its probable source. On the contrary, it confirms it, for by assigning to the arterial tunics the chief power of producing heat, we explain readily why the body maintains a nearly uniform heat during the variations of temperature of the atmosphere. The influence of heat and cold on the animal tissues generally, and the arterial tissue in particular, is well understood; the one dilates them, and the other renders them more contractile. By putting one arm into a bucket of warm and the other into a bucket of cold water, we diminish the force of the pulse in the former but increase it in the latter case. The same thing occurs throughout the whole body when under the influence of general cold. The arteries become more fitted to the production of heat by the increased tone of their contraction. A circumstance further illustrating this view has been observed in animals drowned in hot water, when the action of the heart irrecoverably ceases sooner than if drowned in cold water.

It has been already seen (23, 24) that the living animal frame may be exposed to high natural or artificial temperatures without its own internal heat being materially disturbed. That this is mainly attributable to the cooling influences of the skin and lungs has been incontrovertibly proved by De la Roche. Under ordinary circumstances the production of heat does not exceed the degree required for the proper performance of the animal functions. There is a balance between the supply and consumption of it. This takes place when the body is in a quiescent state. But it often happens, during the exertions of the animal, or when the body is placed in an unusually high temperature, or wrapped in materials which conduct heat slowly, that the generation of heat exceeds the immediate consumption, and the actual temperature of the whole body becomes increased. Nature, however, has beautifully adapted the animal body to keep up a temperature no higher than is necessary to its economy. Accordingly, when any circumstances occur which tend to an unnecessary manifestation of vital heat, by the very power which propels the blood with increased force along the arteries into the capillaries is the reduction of caloric obtained. The pores of the skin are opened, and giving out abundant watery exudation, act by the powerful means of evaporation to diminish the temperature of the body. The local effect of evaporation is well marked in the coldness of the dog's nose, the part being generally moistened is surprisingly cold; but should the exudation be stopped by any internal cause, the nose acquires a temperature identical with that of the other external parts of the body.

36. It usually happens that the atmospheric air received into the lungs during respiration becomes considerably increased in temperature before leaving the body. It carries off an important quantity of the superabundant caloric generated in the animal frame. It serves to graduate that heat, and the heat of the expired air is always proportionate to the internal warmth of the body. The air, therefore, which enters the lungs, instead of being a source of warmth, becomes the means of refrigerating the internal parts of the frame. The extensive surface offered by the air-cells of the lungs for evaporation, materially

assists in cooling the body. The powerful influence which the admittance of air into the lungs has on the regulation of the internal temperature may be inferred from the fact of the land-tortoise of hot countries (7) keeping itself several degrees cooler than the atmosphere. It must be recollected that this animal is covered with a horny shell, almost wholly precluding the possibility of evaporation from the external parts of the body. Still we must not generally regard all the heat acquired by expired air as derived solely from the blood. The whole respiratory apparatus, including the trachea and bronchial tubes, to their minutest ramifications, is provided with elastic tissue for the production of warmth. Throughout the whole course of these tubes, on every inspiration, heat is generated. By these means the air acquires an increase of temperature before it comes into juxta-position with the blood, and the shock is not so great to the system as it would otherwise be.

The air admitted into the lungs affords an abundant source of latent heat which the elastic tissues may absorb during their relaxation.

37. An objection might be urged against the position I have taken, to the effect that the elastic tissue would absorb as much caloric, on its re-assuming its usual dimensions, as it gave out during its distention. It is probable that it does again absorb heat; but it would appear, in operating with a single artery removed from the body, that on its resumption of its primary form it receives caloric from whatever surrounds it, and thus its own temperature is actually increased. The same thing, on a more extended scale, takes place throughout the body, and the fact cannot be controverted. The extensive admittance given to the air through the internal parts of birds and insects may operate, by supplying a ready source of latent heat, to exalt their temperature so considerably beyond what might have been anticipated.

38. As the distention of the arteries depends on the quantity of blood contained in them, so, when that quantity is decreased by blood-letting, or other means, might it not be expected that the animal heat would be less, from the fact that the elastic coats of the arteries being less exercised, consequently supply a diminished quantity of caloric?

39. If the heat of the body were entirely ruled by the respiratory process, would it not be found that when respiration were quickened the heat of the frame would be increased proportionately? but the contrary is often the fact, and the body and extremities become cold when that process is abnormally increased.

40. The independent heat which trees and plants support above that of the atmosphere may be also referred to the exercise of their elastic properties when agitated by the winds. Should this be the case, their temperature ought to be greatest in windy weather.

41. Upon an examination of all the circumstances affecting the generation of vital heat, it will, I think, be admitted:—

That the elastic and contractile tissues of the body are a fertile source of its heat, and that they form the main, if not the sole, means of its production.

42. In the course of this investigation I have given the principal facts attendant on the phenomena of animal heat from the authority of scientific examiners. I have not perverted them to meet my own peculiar views on the subject, but have endeavoured to show, as briefly as I possibly could, the close connection which exists between these phenomena and what I imagine to be their principal cause. If there be any merit in this essay, it consists in the assertion of the discovery of a principle in physics, *i. e.*, that the distention of elastic bodies generates heat; and the endeavour to apply that principle to account for the production of the thermal properties of animals.

Guildford, Aug. 12, 1843.

TETANUS.

To the Editor.—Sir: In The Lancet of July 8, I find an account of the post-mortem appearances in a case of tetanus. As the pathology of the disease does not appear to be understood, I would ask whether, *à priori*, we should not suppose it to depend on an irritable and, in some cases, an inflammatory state of the spinal cord? If this inference be correct, what is the treatment indicated?

1st. Large bleeding, to subdue irritation and control the spasms.

2nd. Blistering along the whole spine.

3rd. Calomel, in large doses, combined with opium, continued until its specific action on the system is induced.

I am aware that each of these means has been tried, severally, and with various results, but I have not met with any case of their conjoint use. I am, Sir, your obedient servant,

H. Whitworth.

St. Agnes, Aug. 22, 1843.

Rhatany and its Indications.—A French practitioner has remarked that rhatany is more efficient as an astringent in arresting hæmorrages from the mucous membrane than those of any other kind. Rhatany is also most suitable to patients in an anæmic or asthenic state; it is contra-indicated in plethoric subjects, active hæmorrhage, and where much excitement prevails. In all atonic diseases, as chronic diarrhœa, leucorrhœa, and other mucous discharges, it may be used with excellent chances of success. —*Bulletin de la Soc., &c., de Toulouse.*

DISLOCATION OF THE EXTERNAL SEMILUNAR CARTILAGE.

To the Editor of THE LANCET.

SIR,—The following case of a rather rare accident seems to be worthy of record:—

On the morning of the 17th inst. I was summoned to Thomas Mills, ætat. 30, a well-proportioned man, resident in this town. He stated that whilst in the act of "cutting his corns," with his foot and leg somewhat twisted inwards, he felt as though something had given way in the knee, and immediately found that he had no longer the power of extending the limb, every attempt at so doing producing severe pain in the joint. He told me that the same accident had occurred to him twice before; the first time in the country, when two surgeons were with him for several hours before the limb was made to resume its normal condition. It again occurred in London, where he applied at St. Thomas's Hospital, and he states that the late Mr. Tyrrell and several others were a long time trying to "put it right," but failed; the plan adopted was by making very powerful pressure over the patella, which caused him severe suffering, and produced much swelling. He was directed to go home, leech freely, apply cold lotions, and keep in bed. On the third day, whilst making a sudden movement in bed, he suddenly recovered the power of straightening the limb or placing it in any position without pain. He felt that "all was right," and resumed his occupation.

I found the leg flexed, and any attempt at straightening produced pain, referred to the situation of the external semilunar cartilage. I fancied (it might be fancy) that I could see a slight elevation of the supra-incumbent tissues, and supposed it to be a partial dislocation of that cartilage. I immediately made extension at the ankle, at the same time adducted the tibia, making the knee of the opposite side a fulcrum, the tendency of which would be to separate the external part of the articulating surfaces of the tibia and femur; his wife, at the same time, was directed to make firm pressure over the cartilage. After keeping up extension for about ten minutes, the parts resumed their normal condition, and, much to his delight, the patient found he could walk with ease, and, in spite of remonstrance, immediately returned to his occupation. The only after treatment was that of directing him to wear a bandage over the knee. I am, Sir, your obedient servant,

CALEB TAYLOR.

High-street, Deptford,
Aug. 20, 1843.

SOME attacks of epilepsy, preceded by vertigo and the *aura epileptica*, are arrested by compression of the facial nerves.—*Ducros.*

CASE OF POISONING WITH ARSENIC, DETECTED SIX MONTHS AFTER DEATH.

BY

G. D. HEDLEY, Esq., M.R.C.S., Bedford.

ON the 23rd of October, 1842, William Dazley, a labourer, twenty-four years of age, living at Wrestlingworth, Beds, was taken ill, and Mr. Sandell, a surgeon, was called in to see him. Mr. Sandell describes his symptoms as vomiting, pain in the stomach with slight tenderness on pressure, sense of constriction in the throat, feeble pulse, clean tongue. He prescribed a saline mixture, and visited him again on the 25th, when he found but little alteration in the symptoms. The bowels not having acted, an aperient powder was ordered.

On the 26th the man was a great deal better, and Mr. Sandell gave him a tonic mixture; but it appears that the only medicine taken by him was one of three pills which his wife had been seen to prepare in the morning, and afterwards to substitute for some she had requested Mr. Sandell to give her. Dazley was unwilling to take the pills, and a girl, fourteen years of age, took one, in order to show him how easy it was to swallow them. About an hour afterwards both he and the girl became sick, vomited, and complained of pain in the chest and constriction of the throat. The girl continued ill for some days, but had no medical aid, and at length recovered. The matters vomited were emptied into a yard in which a pig was kept, and the following morning the pig was found dead. On the 27th the man was better, but still complained of tightness of the throat, which was relieved by the application of two or three leeches. On the 29th Mr. Sandell found him better than he had been at any period of his illness. He prescribed an aperient powder, containing ten grains of rhubarb, a drachm of tartrate of soda, and two grains of powdered ginger. About half-past nine in the evening a white powder, mixed with water, was administered to the patient by his wife, in the presence of his two brothers, who, with a third witness, who saw the powder before it was mixed, positively swore that it was as white as flour. About an hour after taking the powder Dazley again became sick, retching violently, and complaining of heat and constriction of the throat, and thirst; this continued, the man becoming weaker, and the vomiting at last bloody, until half-past five in the morning of the 30th, when he died. Mr. Sandell, surprised at the man's death, requested permission to examine the body, but the friends declined having this done. It was buried in Wrestlingworth churchyard, which is an elevated spot, the soil a kind of red clay, not

unlike fuller's earth, and the grave about four feet deep.

The Body was Disinterred on the 20th of March, 1843, One Hundred and Forty-one Days after Death.

The coffin was in tolerably good preservation. On raising the lid the features were found to be sufficiently preserved to enable the witnesses to identify the body, but the skin of the face and other exposed parts of the body, was converted into adipocere. The shirt in which the body was enveloped was quite rotten. On cutting through the integuments the muscles of the abdomen were seen undecomposed and quite fresh in appearance. The lungs were shrunken and dry, but of the natural colour. The heart was dry, of a natural colour, and presented no trace of disease.

The stomach and intestines were in a most perfect state of preservation, looking as fresh as if death had occurred only a few days previously. On the anterior surface of the stomach, of the sigmoid flexure of the colon, and one or two other parts of the intestines, considerable redness, of a bright florid hue, was observed. On one or two parts there were patches of a bright-yellow colour, and in one spot, about the middle of the small intestine, there was a small quantity of a white powder lying on the outside of the bowel, and adhering to its peritoneal coat. The liver appeared healthy. The spleen was soft and slightly decomposed. The other viscera were healthy. The whole of the alimentary canal was included between two ligatures, and removed for more minute examination. The stomach, on being opened, was found to contain two ounces and a half of a dark reddish-brown coloured fluid, having a quantity of a white powder mixed with it, which subsided to the bottom of the glass measure into which the fluid was poured. The same sort of white powder was found scattered over and adhering to the inner surface of the stomach in small particles, enveloped in mucus. There was general redness of the mucous membrane, of a deeper hue towards the orifices. Around the cardiac orifice, and extending up the œsophagus, was an apparent abrasion of the mucous membrane. On slitting up the œsophagus a small quantity of fluid, mixed with blood, escaped; the abrasion of the mucous membrane, with redness of a deep hue, extended along its whole surface, with particles of the white powder adhering to it in parts. In the small intestines was found a dark-coloured fluid, of greater consistence than that contained in the stomach, assuming, as it descended the bowel, the appearance of thick mucus or jelly, having particles of white powder mixed with it. There was redness of the mucous membrane, of a deeper hue as it approached the stomach and the cœcum, and in parts the bowel was greatly contracted. About the middle of the small intestine was a small ulcerated opening, through which some of the white powder had escaped, and had been observed adhering to its peritoneal surface before the parts were disturbed.* Two or three round worms were found in the lower parts of the ileum. In the large intestines the traces of inflammation were not strongly marked, though they also contained some of the white powder. There was no trace of fæcal matter. In several places in the stomach and intestines were observed patches of a bright-yellow colour, staining through all the coats, and corresponding with those on their outer surface, no doubt owing to the conversion of the arsenic into the sulphuret.

I picked off a little of the white powder, and boiled it in distilled water—the filtered solution had no effect on litmus or turmeric paper. The solution of ammoniated nitrate of silver gave a copious yellow precipitate, the solution of ammoniated sulphate of copper the characteristic green; Marsh's test gave a metallic stain, which, however, was slight, from the small quantity used in this experiment. The stomach was then cut in pieces, and, with the fluid which had escaped from it, and the intestines, boiled with a pint of distilled water for half an hour, and filtered. The clear solution was acidulated with acetic acid, and a stream of sulphuretted hydrogen gas passed through it for half an hour. An abundant bright lemon-yellow precipitate was thrown down; this was collected and dried, and a portion of it heated in a reduction-tube, with black flux; a metallic ring was formed on the inner surface of the glass. On continuing the application of heat this was first driven higher up the tube, and then converted into a white powder, which had a crystalline appearance, visible with the naked eye. The portion of the tube containing this was cut off and boiled in a little distilled water. Ammoniated nitrate of silver and sulphate of copper gave the characteristic precipitates of arsenites of silver and copper.

Bedford, Aug. 19, 1843.

One Advantage of Marriage.—Dr. Casper, of Berlin, has estimated the mortality of unmarried male individuals, between the ages of 30 and 45 years, to be 27 per cent, while among married men of the same period of life it is only 18 per cent. For 41 unmarried men, 78 married men attain the age of 40 years; and the disparity is more striking as age advances; for at 60 years of age there are only 22 bachelors to 48 Benedicts; at 70, 11 to 27; and at 80, 3 to 9.—*Gazette des Hôpitaux.*

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* Dr. Christison, in a letter addressed to Mr. Sandell, states that this is an unique fact in the history of arsenic.

THE PRESENT UNSATISFACTORY CONDITION OF THE COMMUNITY.

To the Editor of THE LANCET.

SIR,—It is impossible to peruse the "General Sanitary Report," and your remarks on the "physical evils suffered by the working-classes," without feeling the utmost alarm at the facts developed. With diseases of the respiratory organs, through breathing foul air, constantly increasing, and with epidemic following closely upon epidemic, the question does not merely concern the poorer classes, who are the more immediate sufferers. All who live in the vicinity of a large city are liable to the same baneful influences. For air that is teeming with malaria is not solely concentrated over the hovels which disgrace our capital, but with every fresh current it may traverse the land until the atmosphere becomes a magazine of poison. Nor is this all. Filth of body and filth of mind—for they are near allies—becoming prevalent, habits are formed which degrade no small section of our fellow-beings below the brute creation.

But much as we may deplore these evils, we ourselves are not to be absolved from blame. It is only recently that public attention has been directed to the subject; and that only because the constant prevalence of fevers in certain districts, which districts are widening, has alarmed our own feelings of self-preservation. And even now that we are threatened with a plague more dire than than that of 1665, because threatening to be of more widely-spread influence, no broad general measures have been propounded to remedy these evils, and we have contented ourselves with grumbling as though they were irremediable.

When we visit the back lanes, the courts within courts of Saffron-hill, and see homes without sewers and every species of abomination lying around, we are not, therefore, to infer that uncleanliness is characteristic of man. Man is not naturally more filthy in his habits than the other portions of the animal creation. But bad habits, fostered by poverty and bad education, have made that a feature in his character from which, under better circumstances, he must have shrunk in disgust. In visiting the homes of the poor, read the shame which dyes the countenance if the room be disorderly or dirty;—and therein we have no slight relic of that better feeling which long-cherished vice has not been able entirely to eradicate. Upon this inherent sense of order we might have acted; but, unhappily, little has been done to strengthen the good, and to prevent the formation of evil, habits. For instance, conceive that the influential classes had discarded and denounced the barbarous practice of burying the dead in the midst of the living, and that in lieu thereof cemeteries—national and *free*—had been substituted, and what different statistics might have been presented by the Registrar-general. One result, at least, must have ensued. One-tenth of our population would not die through living in the vicinity of burial-grounds, and breathing the air polluted by putrefying bodies. So, had Acts of Parliament not excluded light, and with it air, by blocking up windows, which, if opened, would be taxed, we might expect that lung-disorders would not so much prevail. So, had free national baths been provided, the non-use of which would have implied no slight censure, personal cleanliness would have engendered a detestation of those pigsties in which so large a portion of the poorer classes dwell. All these facts testify that a public premium has been awarded to filth; and hence, if pestilence is again to ravage our streets, let us not, in criminal self-complacency, consider ourselves blameless.

But something effectual must be done; for a radical evil we must apply a radical remedy. Not merely pulling down those polluted courts of St. Giles', into which the pure air of Heaven never penetrated; not providing free public cemetries; not establishing free national baths; nor even providing a sanitary police, desirable as these methods are, will entirely eradicate the evils deplored. We must seek to impart love of fresh air and personal cleanliness, based upon the knowledge that they are essential to health and happiness. Successive generations, more and more corrupted each year, have made filth habitual, and thus we shall apply no effectual remedy unless we prevent the formation of these lamentable habits. But we must commence with the young, for on the old custom has done its usual work and made that necessary which was once natural. This can be accelerated by one mode; let the Government refuse its sanction and assistance to any school in which no provision shall be made for imparting knowledge of physiology. Herein we do not desire to make them doctors, but that just such an amount of information should be imparted as would preclude those violations of the laws of nature which tend to their own happiness. If, for instance, they learnt that from the pores issue humours which must either be removed or be re-absorbed into the system in the shape of active poison, a practical example would be afforded of the effect of personal uncleanliness. So, if shown that fresh air is more valuable than the most nutritious diet—that, indeed, it is a food without which vitality must cease—there would be no occasion to say, "Quit your under-ground cellars, unless you desire to be suicides." But if men are told nothing, and that with an

intellect too little trained to perceive the diseases which are derived from the habits to which they are bred, we may declaim as we please against their folly, but in reality we have done nothing for its removal. Of all educations it seems to me that physical training is most desirable; and much as I value the elimination of the moral and intellectual faculties, such education is comparatively worthless, seeing that unless the body be nourished, the brain—the seat of mind—must become disorganised and decline. Let us, then, enforce this knowledge on the rising generation, and the grown man will recognise the fatalities which have occurred through neglect or ignorance of the physical laws. I am, Sir, your's truly.

E. J. Hytche.

Brunswick-terrace, Islington,
Aug. 16, 1842.

WORARI POISON
AND ITS EFFECTS.

This virulent substance, manufactured for purposes of offence and defence by the Indians of the interior of Guiana, &c., is now ascertained with tolerable correctness to be essentially the juice of the bark of the worari vine, a gourd-bearing plant, the fruit of which is of the size of a large orange. Some other plants or materials have been said to be occasionally used in its preparation, as strong Indian pepper, two species of ants, the fangs of two species of snakes, &c.; but if such be really the case, it is probably with the view, chiefly, of throwing a mystery over the process.

The worari vine grows in a sandy soil. The mode of preparing the poison is as follows:—The inner bark or rind of the root (for it is the root only that is used), is scraped off into some vessel. The worary-bally-root undergoes the same process; and is mixed with the worari, as is the vine of the courampoey. To these, mixed together and well-boiled down with some water, the Indians add some peppers, and further boil the whole mass to a thick syrup.

Dr. Hancock has remarked that if such a thing does exist in nature as a direct sedative, in the strictest sense of the term, he should imagine it to be this extraordinary vegetable extract. Its operation on the animal frame is most mysterious. It extinguishes the vital spark without a pang or a struggle, if prepared without any other substance being added, for the most efficient poison is prepared from the worari vine alone. The sensation and effect it produces are extremely analogous to those which arise from excessive bleeding—the animal under its influence sinking from existence in the most placid swoon.

Sir B. Brodie, in two papers read before the Royal Society in 1811 and 1812, has described the results of several experiments performed with this poison, one of which was the following:—

"Some woorara was inserted into a wound in a young cat. She became affected by it in a few minutes, and lay in a drowsy and half-sensible state, in which she continued at the end of an hour and fifteen minutes, when the application of the poison was repeated. In four minutes after the second application respiration entirely ceased and the animal appeared to be dead, but the heart was still felt acting about one hundred and forty times in a minute. She was placed in a temperature of 85° Fahr., and the lungs were artificially inflated about forty times in a minute. The heart continued acting regularly. When the artificial respiration had been kept up for forty minutes, the pupils of the eyes were observed to contract and dilate on the increase or diminution of light, saliva had flowed from the mouth, and a small quantity of tears was collected between the eye and eyelids, but the animal continued perfectly motionless and insensible. At the end of an hour and forty minutes from the same period there were slight involuntary contractions of the muscles, and every now and then there was an effort to breathe. The involuntary motions continued, and the efforts to breathe became more frequent. At the end of another hour the animal, for the first time, gave some signs of sensibility when roused, and made spontaneous efforts to breathe twenty-two times in a minute. The artificial respiration was discontinued. She lay, as if in a state of profound sleep, for forty minutes, when she suddenly awoke and walked away. On the following day she appeared slightly indisposed; but she gradually recovered, and is at this time still alive and in health."

Sir B. Brodie found that the effect of the poison was the more speedy and certain if there were some, but not much hæmorrhage. It appears that the poison may be taken into the stomach without injury, a considerable quantity having been administered to animals by the mouth without producing any sensible effect.—*Pharm. Journ.*, August.

Dr. Julius, in his elaborate work on institutions for the blind, estimates that there is in Prussia one blind person to every 1600; in France, 1 to 1650; in Belgium, 1 to 1009; in the United States, 1 to 1200; in England and Austria 1 in 800 each; and in Denmark, 1 to 738 of the population.

The first hospital for the blind was founded in the thirteenth century under the title of the *Quinze-vingts*, for soldiers returning blind from the Crusades, by Louis IX. of France—a sovereign dignified with the title of Saint, which on this account alone he clearly deserved better than many an ascetic misanthrope on whom it has been bestowed.

THE LANCET.

London, Saturday, September 2, 1843.

"A PLAGUE upon't, when thieves cannot be true to one another!" says Sir JOHN FALSTAFF, and every one must concur in the justness of the exclamation from such a mouth, though thieves, to give them their due, generally *are* true to one another. In fact, there is found amongst most bodies of men who follow given vocations,—whether honest or fraudulent,—a certain *esprit de corps*, resulting from a common interest and a consequent fellow-feeling which are by no means incompatible with the rivalry of individuals.

An exception to the rule of fidelity to a common interest is, however, presented by our own profession, although, generally speaking, no class of men is less influenced by the spirit of personal rivalry. Regarding medical practitioners as individuals, we find among them much good nature and liberality, and a disposition to aid rather than to retard the progress of their professional brethren. But, by a miracle of legislative wisdom, the profession constituted of these benevolent individuals has been so organised in this country as to range under one banner several orders of men, differing utterly in their feelings and interests, so that the worst enemies of the profession may be found in its own ranks. Unhappily the largest and most respectable of these orders, to wit, the surgeons in general practice, is the one which has suffered most severely from this mischievous state of things. Among the many facts that might be adduced in proof of this position there is one so monstrous that were it related instead of being witnessed, it would not receive belief.

Public medical "charities" afford to their officers many opportunities of professional improvement, and sometimes considerable aids to advancement in private practice. The appointments that they hold out are, consequently, objects which the profession n general desire to attain. But in nineteen cases out of twenty, if the rules and regulations of such "charities" be consulted, it is found that no gentleman practising pharmacy or midwifery is allowed to receive the appointment of surgeon to the institution; that is to say, the surgeons in general practice throughout this realm are pronounced to be ineligible to fill the office, none being suffered to occupy it but those grotesque specimens of professional monstrosity in which only one half of a practitioner is developed, namely, the "PURES."

The cause of this we have developed over and over again in our pages during the last twenty years, and as often have shown that the *principle* of the exclusion is contemptibly absurd and outrageously unjust. But once again let us revive attention to the fact, for another long period of repose has been left us by the lazy and imbecile Parliament to bring to public view the old grievances of the profession, of which this is one. It is wonderful, indeed, that a reform in the law of medicine should have to be waited for to effect a cure of such an evil, because the governors of the "charities" have the remedy in their own hands, and the Legislature has never told them that they *shall* do this wrong, or compelled them to give ear to the knavish individuals who persuade them to adopt such a mischievous rule. What is equally strange, however, is that the profession embodying the "ineligibles," do not combine to convince them how unfair and injurious is its operation. Alas! the quantity of reform which medical men expect *other* persons to do *for* them while they stand by with crossed hands, is both remarkable and alarming. Those who in their own conceit form the καλοι τε κἀγαθοι of the profession (GOD help the men!) are not so indolent. They have the merit of the busy bee, and constantly improve "each shining hour," gathering sweet "honey all the day, from every opening flower"—of charity. But the surgeons in general practice, with an apathy which the advocates of passive submission may applaud, but which every independent man must regard as abject to the last degree, have

tamely sufferod the insult and injury thus inflicted upon them. How different a state of things would obtain if surgeons in general practice were as diligent in vindicating their own rights as a profession, as their adversaries in the colleges are in destroying them! They possess the amplest opportunities of advocating them. No class possesses so intimate and extensive an intercourse with the various members of society,—the rich and influential as well as the poor and powerless. How numerous are the means and occasions of showing and convincing them that the whole profession should be amalgamated, and made to constitute ONE FACULTY, governed by bodies elected on the principle of REPRESENTATION,—that medical education should be *free*,—unfettered by the system of tickets and certificates, the knowledge of science being attainable *anywhere* and *any how*, so long as it *be* obtained, the proof of which should afterwards be tested by practical and clinical examinations, in Halls and wards open to the whole profession,—and that appointments to the endowed and other public medical charities should be made from among *the best men*, proved to be the *best* by the mental trial of the concours, all such appointments being accompanied by ample and generous salaries! Thus would the sick poor, in those establishments, instead of being regarded as mere stepping-stones for the mounting of "neveys" and noodles to the high places of medicine, come to be treated as suffering beings who,—occupying wards *in their own institutions*, equally with dukes who fill beds in their own palaces,—should receive the kindest and most skilful attention that can there be bestowed upon them. What glorious opportunities for medical officers of gaining *golden* reputations where now the reputations are but *gilt!* What honourable paths would then be opened to industrious students and diligent cultivators of the remedial art. At present, by astounding contrivances of impudence and intrigue, the few—the half-educated PURES—keep from the profession every post of dignity and profit that either the state or a generous public has created. By crafty exceptions against pharmacy and midwifery they partly effect this; by intrigue and nepotism, and the absence of good laws to keep clear the roads of medical advancement, they accomplish the rest; for even were surgeons in general practice permitted to hold office in the hospitals, they must, in the absence of the concours, work *under ground* to obtain success,—must mole and burrow, and come up through traps in the floors, instead of entering honourably by the open gates. Does not this demand a remedy? And from whom should it emanate? Think ye, brother surgeons, that if ye ask it not yourselves the Legislature will ever grant it to you, beset and ear-wigged as the members of cabinets, one and all, invariably are by the very men who occupy these "close boroughs" of medicine? Idle, indolent, foolish expectation! The greediness of the monopolists is too great for passive opposition. There is but a single wonder connected with it, and that is that they have left to the profession even *one* means of distinction. They *do* allow surgeons in general practice to write and publish *books*, — profitless privilege though it be, to the authors themselves. It is astonishing, however, that no copyright in medical facts has been sought by them at the hands of Parliament,—no Act of the Legislature making it felony for "every man JACK" of the whole tribe of "subordinates" to print works on medicine. They have accomplished many things that are not less astounding to common apprehensions. Quite certain it is that they have monopolised the great bulk of the facts to themselves on which alone a true medical science can be based; for it is in the hospitals only that we expect to obtain those certain statistical events on which successful attempts can be made to erect theories and principles of practice.

What is the profession prepared to do on its own behalf between this and the next session of Parliament?

A correspondent, taking notice of the proceedings at the dinner of the Medical

Association, reported in THE LANCET of last week, page 781, expresses a fear that *nothing* will be done by the profession to promote a wholesome change in medical law during the recess. He founds his opinion on the fact that Mr. CROSSE was permitted at that dinner to denounce the agitation of medical reform in Parliament without opposition on the part of any member of the assembly. Our correspondent considers the omen to be a bad one. It is more likely, however, either that the subject was regarded as *mal-apropos* at dinner, and therefore not then proper to be debated, or that the speaker, although a little elevated (in one sense), was not exactly worth worrying, for although we did ourselves once give him a good and useful caning in his own kennel for some impertinent yelps on a like occasion, yet it would be a great waste of exertion to inflict castigation on him oftener than once in half a dozen years, for he grows no larger nor any worthier of notice, however big or influential in his own esteem. "My mother," says an old nursery rhyme—

> "My mother had a little dog,
> They TINY did him call,
> Sometimes the little TINY would
> Impurify the wall.
> And when he saw a little smoke
> He'd think it was a fire,
> And then turn round the other leg,
> And reach a little higher."

WE shall not attempt to analyse what grounds of difference exist between University College (Gower-street) and King's College (Strand), London, to justify the general impression that the one college is a "free," or "liberal," institution, and the other despotic, as regards the mind and its education. The feeling universally prevails that such a distinction marks them,—that in the college of the theologians and Conservatives there is maintained a net around the mental energies of teachers and scholars, to prevent them from getting on *too fast*, because rapidity of movement and acquirement is dangerous in society, morally and politically. Our object now is to ask what results attends the opposite systems in each building—the bold-backism of King's College, and the freedom from what really and truly are political shackles, in University College? We are instigated by no party or inimical views in referring to the contrast, but offer it to public notice simply from its utility as a statistical fact that is well worthy of consideration; for King's College was expressly instituted to counteract the liberalising tendencies of that institution which the Tory press at first endeavoured to reproach with the contemptuous name of "STINKOMALEE," a miserable witticism of the writer-in-chief, THEODORE HOOK. From every year downwards, since its formation, to the year 1842, in all literary and scientific competitions, and on all occasions in which candidates from each establishment have met, the best honours, and the largest share of prizes, have invariably been carried off by the students of University College. And now that the close of the year terminating in August, 1843, has also arrived, what find we? An amelioration of the difference,—an equalisation of the success,—a reversion of the majorities? The following list of candidates who obtained "honours" at the recent examination of the University of London for the bachelorship of medicine,—reprinted here as it was last week put forth by the Registrar,—furnishes a reply to these questions:—

"The names are arranged in the order of proficiency.

"ANATOMY AND PHYSIOLOGY.

A. Jackson (exhibition and gold medal), *University College.*
B. L. Jemmett (gold medal), King's College.
Jas. Hakes, *University College.*
P. Redfern, Queen's Coll. Edin.
B. M. Eyre, *University College.*
N. H. Littleton, *University College.*

"CHEMISTRY.

Jas. Hakes (ex. and gold med.), *University College.*
B. L. Jemmett, King's College.
N. H. Littleton, *University College.*

"MATERIA MEDICA AND PHARMACEUTICAL CHEMISTRY.

Jas. Hakes (ex. and gold med.), *University College.*
P. Redfern (gold medal), Queen's Coll., Edin.
B. L. Jemmett, King's College.
A. Jackson, *University College.*
N. H. Littleton, *University College.*"

The facts speak nothing *against* King's College. They only serve to show that the

chief principle of your learned "conservative" institutions does not allow them to *bear the best fruit*.

Previously to the above examinations the officers of the University of London did us the honour to forward to our office copies of the questions in the various departments above named that were to be submitted to the candidates. They were too numerous for publication in our columns, considering the limited interest which intelligence of that kind possesses beyond the walls of the examination-rooms. We therefore content ourselves by observing that the questions presented excellent tests of knowledge in medical science,—such, in fact, as no men could answer correctly without deserving to be regarded as very accomplished scholars.

What a pity is it that the directors of the University have not sufficient faith in such examinations to grant their diplomas for successful trials, without hampering students with those injurious regulations which have been borrowed from the authors of the "ticket-and-certificate system."

To the Editor.—Sir: Allow me to ask in THE LANCET, with reference to the late examination at the University of London,—if botany be of such importance as to cause the rejection of men who have been complimented by all the other examiners on the manner in which they had answered the several questions put to them by those examiners? How is it that the examination for that subject, and the examination for materia medica, are held in the same afternoon, it being quite impossible for any one to answer the questions put by Dr. Pereira, and the Rev. Professor Henslow, as they ought to be answered, in the space of three hours? And, in fact, several of the men who were rejected had not sufficient time to answer the questions put by Professor Henslow, having first of all answered those of Dr. Pereira, thinking that materia medica and therapeutics were of more importance than botany, and, therefore, first of all paying attention to them, and finishing them before they commenced answering botany. It would likewise give great satisfaction to be informed how it is that Professor Henslow, at Cambridge, or, at any rate, not at Somerset House, is able to examine and *reject* the men at the London University.

Allow me, likewise, to call attention to the nature of the questions put by Professor Henslow, the examination purporting to be on physiological and structural botany, only, and not on systematical, and to ask whether the questions "Have rosaceæ, leguminosæ, and cruciferæ, stipules, or not?" "Have the seeds of the pisum, ranunculus, geranium, primula, and sinapis, albumen, or not?" belong more properly to the one or the other of these departments of botany. I am, Sir, your truly obliged,

A MEDICAL STUDENT.

August 23, 1843.

"THE ASSOCIATION OF MEDICAL OFFICERS OF HOSPITALS FOR THE INSANE," was formed in 1841, by several medical officers of public lunatic asylums, and designed to consist of all the medical officers of such institutions in Great Britain, as *ordinary* members, and of such medical gentlemen having the private care of the insane, of such persons not medical who were known to take an interest in patients afflicted with insanity, and of such distinguished foreigners as the society at any time should think proper to elect, as *honorary* members. The objects of the association are,—

1. "To improve the management of lunatic asylums.
2. "To improve the treatment of the insane.
3. "To acquire a more correct knowledge of insanity."

To effect these intentions the members meet annually at some town or place in which there is a public lunatic asylum. They solicit the permission of the governors or visitors to visit the asylum, and to *inspect* it thoroughly, and afterwards to assemble in the committee-room of the asylum to speak freely, and in good faith, upon its merits or defects, and the treatment of the patients. On the same occasions such members as think proper read papers on subjects connected with insanity; and all compare their experience, the governors or visitors attending, if they desire. The association has adopted a register for the use of its members, whereby the leading features in every case, under the care of each member, may be *uniformly* recorded, in order to collect a great mass of facts from all parts of the kingdom, as a general record of insanity. The association is collecting plans of all the asylums at present erected and projected, and the printed reports of different asylums. The association has already prosecuted its objects at the Gloucester, Nottingham, Lancaster, Middlesex, and Surrey county asylums, and at St. Luke's, in London; and it has been invited to the Kent, Wakefield, Northampton, Belfast, and Glasgow asylums. The

objects of the association are in no degree connected with a private end, and therefore its members feel assured that it will secure the encouragement of all governors or visitors of asylums for the insane. The honorary secretary is Dr. SAMUEL HITCH, of Gloucester, to whom communications on the subject should be addressed.

THE EASTERN PROVINCIAL ASSOCIATION.

To the Editor of THE LANCET.

SIR,—Can any of your readers inform me who was the *originator* or *founder* of the Eastern Medical Provincial Association; for, unless I have been misinformed, and dates and memory fail me, the gentleman who has been toasted and lauded and lauded and toasted, until he has been "done quite brown," has but small pretensions to that distinction. To the best of my recollection the first time I ever heard of Medical Provincial Associations was in a proposal for establishing one in the county of Suffolk, in 1827, by Mr. Bedingfield, of Stowmarket, which he again brought forward at the first Costello meeting, in 1833; and, although Mr. Bedingfield was in both instances strongly opposed by the late Mr. King, of Saxmundham, a committee was appointed to carry it into effect. The following is a copy of the minutes of the proceedings of that committee:—

"Monday, Dec. 9, 1833.—A meeting of the committee appointed by a numerous assemblage of medical practitioners residing in the counties of Suffolk and Essex, on the 10th of Oct. 1833, was this day held at the Literary Institution, Ipswich. Present,—Mr. Bedingfield, of Stowmarket, in the chair; Dr. Baird; Mr. H. Bartlett; Mr. Bullen; Mr. Francis.—Resolved, 1st. That it appears to this committee desirable that an association of medical practitioners, residing in this and the adjoining counties, should be formed, and designated the Eastern Provincial Medical and Surgical Association.—Resolved, 2nd. That in order to effect this object letters should be addressed to the practitioners of Cambridge, Norwich, Yarmouth, Bury, and Colchester, and the intervening places, requesting them to co-operate in its views and plans, and to enrol themselves members thereof. (Signed) J. O. FRANCIS, Secretary."

Mr. Crosse, of Norwich, was amongst those who were solicited to *assist* in carrying out the second resolution.

In 1834 the necessity of carrying these resolutions into active operation was again urged by Mr. Bedingfield, and so effectively that only a favourable opportunity was awaited for calling the profession together. In this intention, however, the Ipswich committee was anticipated by Mr. Crosse, who, in 1835, took the business out of their hands into his own. How far this was courteous towards the Ipswich committee and their chairman I shall not pretend to determine; but unless some one be aware of a prior claim, and I am inaccurate in the statement of facts and dates, I think I shall be warranted in drawing the conclusion that the honour of being the founders of the Eastern Provincial Association belongs to Dr. Bedingfield and the Ipswich committee, a circumstance which has never hitherto been acknowledged. I am far from wishing to detract from the *real* merits of Mr. Crosse, who has proved himself to be an active and efficient secretary to the association, and it is but justice to admit that he, *in conjunction with other* gentlemen, was instrumental in effecting a junction of the Eastern with the Western Association, that is to say, of converting a *trunk* into a *branch*, an independent into a dependent association. This, perhaps, will be regarded, by some, as a negative kind of honour, of which not many will be covetous, and it certainly does sound strangely to hear a man designated the *founder* of an association which he only *helped* to metamorphose into a branch. Such a foundation was probably first laid in the sister kingdom.

Once upon a time, as the story goes, a certain divine clapped a sort of extinguisher upon the top of a fine gothic steeple, which little toad's-cup excrescence the modest man and some of his admiring parishioners designated a *spire;* but others, in their zeal to do honour to the splendid architectural device of their worthy rector, declared that he was the founder of the steeple. Mr. Crosse *helped* to clap a sort of extinguisher upon the Eastern Provincial Association, and he is now most *sensibly* eulogised by his admirers as the *founder of a branch!* I have the honour to remain, Sir, very respectfully your's,

A MEM. OF THE E. P. ASSOCIATION.
Ipswich, Aug. 22, 1843.

CASE RELATED BY MR. SAMPSON.

To the Editor of THE LANCET.

SIR,—In your report of the meeting of the Provincial Association at Stowmarket, I observe that you have marked with a note of admiration (exclamation) the word *insectivora*, as applied to Mr. Sampson's case. As that part of the report was drawn up by myself I will briefly state why I designated the case as I did. The case, as related by Mr. Sampson, appeared to the medical men present to be one of ingenious but gross deception on the part of the patient. He stated that the patient was reported by her friends, who were very respectable, to have repeatedly passed *per anum numerous* specimens of cockroaches, beetles, swifts, *locusts*

three inches long, snails, &c. Mr. Sampson stated that he had been asked to be present during the ejection of the above miscellaneous gentry, but had not been able to be so. Dr. Durrant stated that he had seen the locusts, and Mr. Sampson had been shown innumerable specimens of the others; but they had neither of them, as yet, been able to detect the imposition, and the patient's friends were completely deceived, particularly as no motive whatever can be assigned for any deception on the part of the girl. Mr. Sampson promised to watch the case carefully, and as it is before the public I hope he will communicate to you the result. I was, of course, at a loss how to class or denominate the case, and as I thought that insectivora would be more likely to pass muster than *molluscæ*, I inserted that in my report.

I may state that the reporter has made a mistake in an observation imputed to me about absorption of air. What I said was merely in correction of some remark that the air admitted into a serous cavity was *absorbed*. I stated that I considered it was either imbibed or entered into chemical combination with the disorganised tissues. Your obedient servant,

C. R. Bree.

Stowmarket, Aug. 28, 1843.

SALE OF SECRET REMEDIES ABROAD.

An amusing scene was enacted in the Royal Court of Paris lately, during the trial before it of a M. Warton, the proprietor and vender of the *Ervalenta de l'Afrique* and the *Melasse de Cochinchina*, a compound respecting which, some proceedings, in an inferior court, we noticed in The Lancet, ante, p. 455. It may be recollected that on the previous occasion the ervalenta turned out to be nothing more than ground lentils, and the Cochin-chinese treacle to be ordinary molasses. The decision however, on that occasion not having been completely according to the wish of the attorney-general, he moved the case into a superior court: it will be seen that he went farther and fared worse. The following conversation before the latter court is detailed in the "Gazette de Tribunaux:"—

Question. You have publicly sold some alimentary substances?—*Answer.* I have sold Ervalenta and Melasse of Cochinchina.

Q. How have you procured the knowledge of their virtues?—*A.* It is to myself that the world owes the discovery of the quality of the first. I know nothing more efficacious against—constipation!

Q. But there is the melasse also.—*A.* Aye,—I should think so, and an excellent thing it is,—*pardieu!*

Q. Why have you not announced this remedy under its real and ordinary name?—*A.* I did so at first, but it didn't take. I then substituted the scientific for the ordinary name of it, and I have now sold all my stock.

Q. But you have shortened the scientific name?—*A.* I have, indeed, shortened it a little in *Frenchifying* it; but then that has nothing to do with the properties of the remedy.

Q. If the public knew that that which you sell is nothing but lentil-flour, probably no one would buy of you?—*A.* Well, that's possible!

Q. How do you sell each packet?—*A.* At three francs the kilogramme. The grocers sell it much cheaper; but I have doubled the price to avoid the appearance of any collusion with them.

Q. And you say that it will cure diseases?—*A.* As an article of food it is excellent. It preserves you from the *fatiguing inconvenience* of constipation. (The speaker warmed as he proceeded in detailing the virtues of his specific.) Do not believe, gentlemen, that I stand here as a fanatic—an enthusiast. No, no, I am no charlatan, and if I tell you that the Ervalenta is a specific against constipation, it is because I have proved the fact on my own person. (General laughter.)

Q. What have you to say, then, of your Cochinchinese treacle?—*A.* Cochinchinese is, perhaps, not exactly the most proper word; for the article comes principally from Jamaica and Porto Rico—some little distance, indeed, from Cochinchina. I have given it that name to prevent people going to the grocers, who sell only beet-root treacle—the savages! Do you know the effect of grocers' treacle? It does not cure constipation—it increases it.

Q. But you make the public pay five times as dear for your melasses as they do elsewhere?—*A.* Never think it is a desire to get money that makes me sell my articles so dearly. Druggists commonly get 6d for what grocers pocket only 3d. And, besides, they too often sell the vile beet-root treacle for that of the cane, that they may afterwards have to sell purgatives, &c.

Much against the wish of the attorney-general, the Royal Court acquitted M. Warton, who probably owed his success to his unabashed and mirth-making mode of pleading his own cause.

A MEDICAL DISCOVERY OF THE NINETEENTH CENTURY!

M. Diday (for the sake of a certain aptness his name should have been *Didee*) had observed (admirable observer!) that to prevent sneezing it is only necessary to rub the lips, eyelids, tip of the nose, &c., briskly with the finger; and he suggests the use of the same means for checking the access of convulsive movement of the lungs, even on the

brink of their approach,—in plain English, for preventing cough; for, he says, "*sneezing*, considered with reference to its purpose, and the mechanism by which its end is effected, is nothing more than *a cough of the nasal fossæ and pharynx*. (Sublime physiologist!) Accordingly, he recommends friction with the finger, *avec une certaine rudesse*, over the nose, lips, and *eyes*, when the desire to cough comes on; and when this is pertinaciously reproduced, we are further recommended to employ friction to the face after a fashion somewhat as the ogre in Jack the giant-killer laid about him, "first on one side and then on the other."

But so powerful a remedy is not by any means to be used with levity, nor in every species of cough. It is even to be regarded as demanding the support of *accessory means*. Hear its immortal discoverer:—

"This method is not advocated under the expectation that it is to supersede the exercise of the will, which, indeed, has an important influence; in fact, it only serves to aid the exercise of the latter. It is *indispensable* that the will should be exerted to prevent coughing! And it is only at the commencement of inflammatory diseases that the plan proposed can be employed with any success; for it is obviously powerless against a long-standing spasmodic cough, or one provoked by the presence of matters which have to be expectorated."

Wonderful accession to medical science! but what is, then, the species of cough for which this dangerous remedy may be put in force? M. Diday tells us:—a cough, he says, connected with a *simple irritation nerveuse*. We know, indeed, of one species of irritation which is notoriously relieved by rubbing; it is that vulgarly called the "Scotch fiddle." Now, the analogy of the means employed to cure the cough resulting from the "simple irritation nerveuse" adequately warrants our giving to that disease a nosological name analogous to the above; and joining thereto, as in duty bound, the name of the great discoverer, we shall call it *fiddle di-dée*, a cognomen which may be extended to its remedy as well.

TREATMENT OF MALARIA.

The great destroyer of youth and beauty, malaria, spares neither young nor old; in the mansion or the cottage; none are exempt from its attacks who dwell in low, marshy districts. I cannot too strongly urge the authorities who manage drains to use their utmost power to maintain an effectual drainage, and to remove all accumulation of vegetable matter, which, when decomposing, rapidly generates the great source of fever. I have observed that persons affected with malaria are relieved from it in one of three ways,—first, either by its suddenly leaving them; secondly, by passing off with a violent diarrhœa; and, thirdly, by terminating in intermittent, remittent, or continued fever. In the second, patients will be suddenly attacked with a violent purging of fœtid stools, accompanied with small pieces of hardened fæces; vomiting will also sometimes take place. The diarrhœa will last a few hours, or a day or two, after which the patient is exceedingly weak, and feels sore all over the abdomen, as if beaten; he generally has an enormous appetite afterwards, and recovers in a week or two. The terminating in continued fever is, I am sorry to say, the most frequent mode. No plan of treatment can be laid down; all must depend upon existing symptoms, battling off threatened local inflammation, and administering nourishment and stimulants when required. All will depend upon the practitioner's knowledge of the subject, and each case will prove a lesson for the future, storing up the many little facts which the opportunity affords, and which constitute that great desideratum, *experience*.

As regards the treatment of malaria, change of residence to a more healthy district is the best; but all have not the means. I therefore recommend the following, which I have found, after repeated trials, to be the most beneficial plan to pursue:—*Compound chloride of mercury* pill, five grains, given at bed-time, to be followed by the following draught early in the morning:—*Rhubarb*, half a drachm; *compound spirits of ammonia*, half a drachm; *compound infusion of senna*, an ounce and a half. Mix. To be repeated again and again, until the bowels have been well purged, and not to be satisfied with three or four loose motions, but to produce watery evacuations. The patient will feel weak after this: still nothing less than the violent purging will do, and this is to be followed by bark, port-wine, and nutritious diet. When suddenly attacked with diarrhœa I would not arrest it too soon, but rather palliate the effects it produces. Sometimes there is a great disposition to syncope, particularly in females, and in all an acute pain about the umbilicus, occurring in paroxysms, and ending with a desire to have a motion, with great tenesmus. I have found the following mixture to be very serviceable:—

Acetate of morphia, one grain; *compound spirits of ammonia*, two drachms; *water*, to six ounces. Mix. Two tablespoonfuls every third hour.

A poultice on the abdomen will relieve the pain considerably; if not leeches should be applied. There is frequently an accumulation of scybala in the colon and rectum. The following enema to be administered, and to be repeated occasionally:—*Decoction of poppies, infusion of linseed*, of each six ounces. Make an injection. These cases have occasionally been attended with deli-

rium; of course, whenever any unusual symptoms arise, they must be combatted accordingly.—*Mr. E. Morris* (of Spalding, Lincolnshire), *in Prov. Med. Journ.*

PROPOSED SOLVENT FOR URINARY CALCULUS.

The following particulars are extracted from an interesting paper by Mr. Alexander Ure, Surgeon to the Western Ophthalmic Institution, in the "Pharmaceutical Journal" for August last. Mr. Ure has devoted considerable attention to examining the capabilities for dissolving uric acid calculus which are inherent in *carbonate of lithia*, a rare mineral, but one which, if the chemical powers that it exerts over uric acid concretions prove as decided within as they are energetic without the animal economy, chemists will do well to procure artificially, by the readiest means they can command, as, in such a case, it bids fair to come into pretty general use as a remedial agent.

Carbonate of lithia exists in various mineral springs in Silesia, Galicia, and other provinces of the Austrian empire, in the Kränchen spring at Ems, &c., some of which have proved of recognised benefit to patients with certain unhealthy conditions of the urinary organs. It dissolves in proportion of one per cent. in water, at 60° Fahr.; it has a faintly alkaline, but not unpleasant, taste; and its base has a remarkable affinity for uric acid, urate of lithia being also the most soluble salt formed by that acid. One part of carbonate of lithia, dissolved in water and boiled with an excess of uric acid, dissolves four parts of the latter, which are held in solution after cooling. Urate of lithia crystallizes by evaporation in the shape of small grains, which require sixty parts of water, at a temperature of 60° Fahr., to re-dissolve them; it contains 14.4 per cent. of pure lithia (Berzelius, "Rapport Annuel," 1843, p. 325).

A solution of one grain of carbonate of lithia in an ounce of distilled water has been brought to a temperature of 98°, and pure uric acid gradually added in minute portions until it ceased to dissolve. The quantity thus taken up was 2.3 grains. The resulting solution, which remained unchanged the following morning, being saturated with hydrochloric acid, threw down a precipitate of uric acid, amounting to two grains. Now, one grain of soda, dissolved in an ounce of water, took up only one grain of uric acid; one grain of carbonate of potash took up 1.4 grains; one grain of borax, 1.2 grains; and four grains of bicarbonate of soda, 1.1 grains. Hence it follows that the solvent power of carbonate of lithia is more than double that of carbonate of soda; nearly double that of carbonate of potash or of borax; and about eight times that of bicarbonate of soda, which is the active ingredient of the Vichy water.

Mr. Ure details the following experiments:—"A human urinary calculus, of uric acid, with alternate layers of oxalate of lime, having been most accurately poised, after being previously brought to hygrometric repose, by digesting in fresh urine and then carefully dried, was placed in a solution of four grains of carbonate of lithia, in an ounce of distilled water, and steadily maintained at a blood-heat by means of a water-bath, during five consecutive hours. On being withdrawn, nicely washed, and again dried as before, it was found to have lost five grains in weight, which is at the rate of one grain an hour. The calculus was deeply eroded in different parts, the delicate laminæ of oxalate of lime remaining intact, imparting to the surface the appearance of deep etching. The menstruum acquired a pale-yellow tinge, and there fell down from it, on cooling, a light flocculent deposit of urate of lithia, in which silky crystalline tufts could be discerned by help of the microscope. It was still alkaline to litmus. Decomposed by means of hydrochloric acid, it yielded nearly three grains of pure uric acid.

"The remaining half of the same calculus being allowed to stand during four hours in two ounces of the natural Vichy water, from the spring called Hôpital (containing three grains and a half of carbonate of soda), was found to have parted with two-tenths of a grain of uric acid; while the former portion of the calculus, placed under precisely similar circumstances, at the same time, in a solution of 1.6 grains of carbonate of lithia to two ounces of distilled water, afforded nine-tenths of a grain of uric acid. Thus is demonstrated the very superior solvent agency of the above feeble lithia solution over the Vichy water.

"Half a grain of urate of soda (the ordinary basis of gouty concretions or chalk-stones) diffused in an ounce of distilled water at the blood heat, completely dissolved with the addition of one grain of carbonate of lithia, the solution continuing limpid and unaltered; whereas, half a grain of the same urate, in a similar quantity of water at a corresponding temperature, rested apparently unchanged. Urate of soda is about as insoluble as uric acid."

A very large proportion of the stones which occur in the human urinary bladder are composed wholly or in part of uric acid. Of all the various menstrua hitherto recommended none appears to promise more favourably than the carbonate of lithia, from the promptitude and energy with which in solution it attacks calculi of this description. When fresh healthy urine is rendered alka-

line by carbonate of lithia no deposition occurs.

It has been proposed to employ this chemical agent, not as an internal medicine intended to pass through the round of the circulation before exerting its agency upon the contents of the bladder, but to oppose it to the latter in the form of a direct injection. "If," says Mr. Ure, "by means of injection we can reduce a stone at the rate of a grain or more an hour, as the above experiments would imply, we shall not merely diminish the positive bulk of the calculus, but farther loosen its cohesion and disintegrate it, causing it to crumble down and be washed away in the stream of the urine. Cases may present themselves in which it may be expedient to conjoin the use of the lithontriptor, but only occasionally and at long intervals; and when this is used it may be presumed that the plan of throwing in afterwards a weak solution of this kind would generally exercise a beneficial influence in obviating irritation, by removing the sharp angular points and asperities of the broken fragments of the stone."

Injections into the bladder do not appear in general to exercise any injurious influence. Sir B. Brodie has found that organ to bear without inconvenience a stream of fluid composed of two minims and a half of nitric acid for each ounce of distilled water (Med. Gaz., June, 1831). An Austrian surgeon has recently introduced with good success vinegar into the bladder in a case of phosphatic calculus. M. Lisfranc has in like manner used tincture of cantharides for the cure of enuresis, &c. Mr. Ure states that he has thrown a dilute solution of nitrate of silver into the bladder, with the best effect, in cases of chronic catarrh of that viscus.

Lithia is, unluckily, a scarce alkali; but lepidolite, or lithia-mica, a hard siliceous mineral, of a laminated kind, from Rözna, in Moravia, contains from 3 to 4 per cent. of that substance. It is, however, most readily obtained, perhaps, from *spodumene*, a mineral that is found at Killiney, near Dublin, in which it exists, according to Stromeyer, in the proportion of 5.6 per cent.

UTERINE AND ABDOMINAL PHLEBITIS, AND POST-MORTEM APPEARANCES.

Dr. R. Lee, in a recently published lecture on uterine phlebitis, relates the following case:—A woman, thirty-one years of age, was delivered of an hydrocephalic child after a labour protracted for three days. She was immediately afterwards seized with a shivering fit which lasted for upwards of an hour, and was repeated for several ensuing days at irregular intervals. Uterus painful on pressure; lochia natural; bowels open; pulse feeble, and from 133 to 140; troublesome cough and hoarseness. On the fourth day after delivery the secretion of milk appeared, but for a short time only. From this day to the tenth the skin presented a dusky yellow tinge; heat of surface increased, respiration became hurried; thirst and dry tongue; restlessness, and great prostration. The uterus had, however, subsided, and pain was felt only in the right iliac region; the bowels were regular. But the cough and prostration aggravated, and the patient gradually sank, and died on the twelfth day after delivery. The uterus having been removed from the body, the veins at the right superior angle, to which part the placenta had been attached, were discovered empty, and their interior of a bright scarlet colour. On tracing them towards the trunk of the right spermatic vein, they were found containing a sanious purulent fluid, and were contracted in diameter by false membranes, and the veins of the right ovary and Fallopian tube were blocked up with firm coagula. The spermatic vein was so thickened in its coats as to assume the appearance of an artery; and at its termination in the vena cava its orifice scarcely admitted a crow-quill. The contiguous portion of the vena cava and the right emulgent vein also exhibited the sequel of inflammation, being lined with adventitious membranes. In the thorax, the lungs were found collapsed, and air escaped from the right pleura, in which also were between ten and eleven pints of reddish serum. The pulmonary texture was greatly altered, and in some places gangrenous. Death, in fact, appeared to have resulted immediately from disease of the chest, rather than from that of the abdominal veins, extensively as they were affected by disease.—*Med. Gaz.*

Constituents of Mineral Springs.—The springs at Tenbury (Worcestershire) are acknowledged to be beneficial in diseases of the lymphatic system, a circumstance, doubtless, due to the quantity of iodine they hold in solution. According to Dr. Daubeny and Mr. West, a pint of their water contains, of chloride of sodium, 89 grains; chloride of calcium, 30 grains; iodine, .016 grain; and bromine, .425 grain. It is said that another spring, still more strongly impregnated with the chlorides, has been discovered since the above analysis was made.—*Provincial Journal.*

Prussic Acid a Cure for Gout.—Dr. Seidel, of Breslau, advocates the application to gouty joints of hydrocyanic acid of medicinal strength, which being painted over the seat of disease with a camel's-hair brush, removes the acuteness of the pain in a few hours.—*Med. Zeitung.*

NEWS OF THE WEEK.

Dr. Hastings, of Worcester, has detailed an instance of the death-doings of the satellites of Priessnitz, in an old gentleman afflicted with gout, who was credulous enough to undergo the hydropathic treatment at Malvern. A cure was promised in a fortnight, or one hundred pounds to be forfeited in case of failure. The gout, indeed, evacuated the field during the process, and the wily water-doctor saved his conscience by a quibble; for, of course, he was not answerable for the supervention of other and more fatal diseases. The action of the heart soon became seriously affected, and every symptom of hypertrophy of that organ presented itself. The extremities swelled, and a general dropsy came on. In fact, within ten months of the poor fellow's application to the water-quack, he died at Malvern, and at the autopsy his heart was found enlarged to twice its normal size, and the cellular membranes throughout distended with yellow serous fluid. How many of Sir Charles Scudamore's *forty cases* have thus terminated? The after-history of them it was not, of course, his province to disclose!

Hydropathy has found its illustrators among the caricaturists, one of whom works in the back shop of Messrs. Fores, in Piccadilly, whence a proof of his labours has been sent to us, under the title of "The sure water-cure;" but as the humour of the lithographist, such as it is, does not legitimately fall under our notice as medical critics, we must pass the work by, extracting, however, one sentence from the preface, which gives to hydropathy a very high authority and most ancient date. "To the idle sneerer at novelties," observes the author, "we proudly point out the fact that"—the water-cure is as old as the flood, the first grand treatment by that remedy having taken place in the time of the venerable Noah.

(*From a Correspondent.*)—The following has appeared in print this week:—"It is reported that a wonderful cure by cold water has been lately effected by Mr. Rotch, of Harrow, ex-chairman of the magistrates of Middlesex. An old lady, between 70 and 80 years of age, Mr. Rotch's mother, residing in London, became affected with the low nervous fever, of a typhoid character, that has of late prevailed a good deal. She was placed under Dr. Roe and Mr. Wakefield, personal friends of Mr. Rotch. The disease was progressing uncontrolled by the remedies prescribed. A superintendent of a Bath hydropathic establishment, another of Mr. Rotch's friends, was sent for, and advised the wet sheets. As the regular medical attendants had not then despaired of a cure, this suggestion was not attended to; but, several days after, when, in the opinion of Dr. Roe and Mr. Wakefield, the case was hopeless—when, in fact, they pronounced the old lady to be *in extremis*—Mr. Rotch had the moral courage to apply the cold-water treatment. A sheet was soaked in cold water, and the patient, quite naked, wrapped up in it, the face only uncovered; over that were then placed several dry blankets, rolling up the patient like a mummy. Thus encased she got a plentiful supply of cold water to drink. Perspiration soon came on, and in an hour it was profuse. From that instant the patient began to rally, and after several repetitions of the same treatment, at due intervals, the recovery became perfect, and the old lady is now as well as she has been for many years. Will Dr. Roe or Mr. Wakefield lay all the particulars before the profession, and say whether they really did pronounce the case hopeless, and the patient *in extremis*?"—To this statement the following reply has been made:—"We never did give the lady over—we never considered her *in extremis*—nor should we have entertained the *smallest* apprehensions of a *fatal* result, were it not that causes which have little or no effect upon young persons often extinguish the feeble flame of life in those who have attained the advanced age of seventy-eight.

"Hamilton Roe—Henry Wakefield."

What says Mr. Rotch (with whose consent the original paragraph was probably printed) to these announcements?

The Sydenham Society has already announced the following works for speedy publication:—Sydenham's works, complete, in Latin, edited by Dr. Greenhill, of Oxford; a complete edition of "Hecker's Histories of the Epidemics of the Middle Ages," edited by Dr. Babington;" a first volume of "Hasse's System of Pathological Anatomy," in English. Among other works also contemplated are those of Paulus Egineta, the complete works of Hewson and of Harvey, an English edition of Sydenham's works, and a translation of Schwann's works on the Intimate Structure of Animals and Vegetables. The society's members amount to 1200.

Westminster Hospital School.—The lecturers at this school, with the view of inducing students to enter, have offered as prizes the offices of house-surgeon and clinical assistant at the hospital, free from purchase fees. We are told that a great effort is to be made by the medical officers of the hospital to create for it a character as a place of clinical instruction during the next session.

The College of Surgeons has just altered its regulations in the following points:—1. Students were formerly required to bring proof "of having studied anatomy and physiology, by attendance on lectures and demonstrations, and by dissections, *during three anatomical seasons or sessions, extending from October to April inclusive.*" The

latter part of the rule now runs thus: "*during three winter sessions of not less than six months each.*"—2. Each course of the practice of surgery, physic, chemistry, materia medica, and midwifery attended, was formerly required to extend to *seventy* lectures. The number is now left undefined.—Moreover, the medical teachers have received a note from the college dated August 15, 1843, saying that the council consider it to be "highly inexpedient that the pursuits of the students should be *interrupted by a vacation at Christmas*, or at any other period of the winter, and that they strongly recommend that the vacation hitherto allowed should be *discontinued*." The council are said to have begun to think that "the students were over-lectured." If such was their opinion they have adopted a very odd mode of indicating the opinion, by proposing to abridge *both the courses and the holidays*. In what absurdities do their mischievous and avaricious schemes continually involve them.

St. Andrew's, Glasgow.—The Senatus Academicus of this university, recently, after an examination conducted by their professors of medicine, chemistry, and humanity, assisted by Dr. Robertson (from Edinburgh), and Dr. Hannay (from Glasgow), conferred the degree of doctor in medicine on the following gentlemen:—Jarritt Irwin, Carlow; John Scott, Tyrone; William L. Meredith, Cork; Edmund Dale, London; Charles D. Finch, Kent; Frederick C. Finch, Kent; Joseph K. Carey, Newport; Henry Huish, Hampshire; Edward D. Doyle, Kilkenny; John H. Gray, Manchester; Nathaniel Buckley, Rochdale; P. G. Stewart, Perthshire; William F. Merson, Tiverton; John Spencer, London; Patrick B. Hislop, Glasgow; Charles M'Kay, Kilrea. The final examination of four other candidates for the degree was delayed until the next gradation in May.

The Brodie Medal.—This testimonial was presented at a public dinner at Willis's Rooms, on the 3rd of August, Sir C. Clark in the chair. The medal is a fine specimen of the art, by Mr. Wyon, of the Royal Mint. On the obverse it presents the bust of Sir B. Brodie, and on the reverse a female figure, emblematical of medicine, in the attitude of kneeling to trim the Hygeian lamp. Over the design is the appropriate motto from Lucretius,—

"E tenebris tantis tam clarum extollere lumen qui potuisti."

And in the exergue—

"Consecli et discipuli gratulantes."

A verbatim report of the speeches at the dinner was forwarded to our office, which we should have published, but that it proved to be a *circular*, our custom being not to insert duplicate reports of proceedings.

The total deaths in the metropolis during the week ending August 19th, amounted to 795, or 6 less than in the preceding week. Deaths from diseases of the brain and nervous system had diminished from 138, in the week before, to 129; those from diseases of the respiratory organs from 204 to 185; those from diseases of the stomach and digestive organs from 81 to 75; and from natural decay from 60 to 51 cases; a decrease was also experienced in deaths from diseases of the urinary organs, of the joints, and of the skin, &c., deaths from violence, &c., and those in childbed. But there was a considerable increase over the previous week in the deaths from epidemic and contagious diseases, the total number being 200, *viz.* 182, and 13 above the weekly average of the five past summers. Of these, 33 deaths were from typhus (an increase of 9 over the week preceding); 19 from hooping-cough, 25 from measles, 43 from scarlatina, and 8 from small-pox. From three of these infantile diseases (small-pox being that excepted) the deaths were less than in the previous week; but 10 individuals died from dysentery, and 14 from thrush, being much above the average of deaths weekly from those complaints.

Power of Galvanism.—A contemporary foreign journal contains the following statement:—Weinhold cut off a cat's head, and when its arterial pulsation had ceased, took out the spinal marrow, and placed in its stead an amalgam of mercury, silver, and zinc; immediately after this was done the pulsation recommenced, and the body made a variety of movements. He took away the brain and spinal marrow of another cat, and filled up the skull and vertebral canal with the same metallic mixture. Life appeared to be instantly restored—the animal lifted up its head, opened and shut its eyes, and, looking with fixed stare, endeavoured to walk; and whenever it dropped, tried to raise itself upon its legs. It continued in this state twenty minutes, when it fell down and remained motionless. During all the time the animal was thus treated the circulation of the blood appeared to go on regularly the secretion of the gastric juice was more than usual, and the animal heat was re-established.

An octavo work of 263 pages, under the title of "The Vital Statistics of Sheffield, by G. Calvert Holland, Esq., M.D., Physician Extraordinary to the Sheffield General Infirmary, London," has just been published by Mr. Tyas, of Paternoster-row. Surveys of the population ought to be made by medical men in every town of the kingdom, with a view to knowing what is wanting to be done by the local authorities, or the Government, to better the condition of the working classes, and improve the health of the whole population. When time per-

mits we will ascertain whether Dr. Holland has fulfilled his task with the amount of credit to his honesty and talent that seems to belong to his industry.

It appears from a statistical report furnished to the French Academy by M. Moreau de Jonnés, one of the ablest statisticians of the day, that insanity has been on the increase in France during the last seven years, and and that insane persons amount to one two-thousandth part of the population, just half of their amount in Belgium. The returns to Parliament of insane persons in England and Wales note only 852 cases, or 1 in 13,000. Brother Jonathan says that every fourteenth person in the state of Maine is a madman.

Scientific Societies.—A Bill has recently passed the Parliament to exempt all scientific and literary societies from parochial and other rates. The Act comes into operation on the 1st of October. Societies, in order to avail themselves of this privilege must cause three copies of their rules of management to be submitted to the barrister, or other person appointed to certify the rules of friendly societies. One certified copy is to be returned to the society, one to be retained by the barrister, and the other transmitted to the clerk of the peace for confirmation. If the barrister refuse to certify, application may be made to the quarter sessions. Any person assessed to any rate on account of such a society may appeal to the quarter sessions on giving notice.

We are apt to forget that the sensations expressed by nerves seldom originate from the nerves themselves, organs and instruments of sensation, though they be; but almost invariably from the combinations of structure in which they severally arise. The greatest disturbance of nervous function is compatible with the soundest state of nervous structure; for the function of a nerve, which is sensation, is as dependent on the integrity of other structures as of its own.—*Dr Wilson on Spasm, &c.*

Preparation of Belladonna.—M. Desmarres employs the following infusion in cases of hernia of the iris of a traumatic kind, or dependent on ulcerations of the cornea:—℞ *Belladonna and henbane leaves*, of each, six drachms; *boiling water*, a pint. Infuse in a close vessel till cold; strain completely, and add of extract of belladonna (without its fecula) three and a half drachms. Dissolve, filter, and keep cool. It may be applied every five minutes by the aid of a dossil of lint or otherwise.—*Gazette de Santé.*

The testis is occosionally found in the perineum, from lengthening of the cord, perhaps, or other anomalies which anatomists have not hitherto sufficiently investigated.—*Ricord.*

Diagnosis between Epididymitis and Orchitis.—In the former disease the epididymis forms a distinct crescentic tumour behind the testis, and is hard, while the testis preserves its proper size and elasticity, and is free from adhesions. In orchitis, on the contrary, the testis is increased in size, hardened, and adherent to the skin of the scrotum, which has lost its puckered appearance.—*Ricord.*

ROYAL COLLEGE OF SURGEONS IN LONDON.

List of gentlemen admitted members on Monday, Aug. 21, 1843:—J. T. Roberts, R. T. Wylde, J. T. Winnard, T. J. Heaton, N. Chadwick, C. A. Mercer, M. Healey, T. E. Drinkwater, F. D. Mudd, W. Hunter, G. W. T. Jarvis, T. Clark.—Admitted Friday, August 25:—W. F. T. Ivey, J. Burgess, E. Cottingham, E. L. Ogle, E. Kittson, W. Poole, C. A. Wakefield, F. Field, B. H. Jagoe, W. Pollock, T. Spain, G. Padley, T. B. Keetley, W. Watson.—Admitted Monday, Aug. 28th—E. T. Rendall, B. Barrett, F. Wildbore, T. Orton, C. R. Morgan, T. H. Baker, T. Engall, C. Cooper, T. C. Lewis. There will not be another court until October.

CORRESPONDENTS.

The communications of *Dr. Laycock, Mr. Orton*, and numerous other correspondents, shall receive early attention.

Errata.—The remarks at the bottom of page 781, last week, were erroneously printed. They should have stood thus:—"The usual toasts, and others which were appropriate to the occasion, were drunk, only distinguished (beyond the customary marks of notoriety) by some nonsense uttered on the subject of medical reform by Mr. Crosse, of Norwich, to the effect," &c.

In the leading article of the last Lancet, page 775, the Registrar of Deaths in the district of Grays'-Inn-lane, accidentally led us into the following error:—In the document from which the table in that page was compiled the Registrar had recorded the population of the districts as *one* thousand instead of *four* thousand. The *character* of the deductions which we had drawn from the table was not affected by the mistake, but the materials for those deductions were subject to serious impugnment. Each figure of one in the second column should be changed into figures of four, and the last figures under the head of "Mortality" altered accordingly, standing thus:—

4132.....	1 in 46.6
4465.....	1 in 37.5
4448.....	1 in 28.7
4386.....	1 in 23.2
4433	1 in 31.9

The reader should be so good as to make these corrections in the table with his pen.